APPENDIX B. Directory of OSS E/PO Programs

This directory provides overview information on the overall E/PO activities of each OSS mission or program. Each listing contains the following information:

Title:
Title of the mission or program.

Description:
Overview description of the E/PO activities conducted by the mission or program.

Lead:
Person or organization with lead E/PO responsibility for the mission or program.

URL:
Web address for further information on the mission's or program's E/PO activities.

Activities (or Grants):
Indexed listing of all E/PO products and activities conducted or supported by the mission or program (or of all active E/PO grants supported by the program).

The listings are grouped into categories as follows:

Office of Space Science
- Grants Programs
- Major Partnerships

E/PO Support Network
- Forums
- Broker/Facilitators

Astronomical Search for Origins Missions
- Major Missions
- Explorers
- Navigator
- Other NASA Programs

Solar System Exploration Missions
- Major Missions
- Discovery
- Mars Exploration Program
- Outer Planets Program
- Other NASA Programs
- International Missions with NASA Participation

Structure and Evolution of the Universe Missions
- Major Missions
- Explorers
- Attached Payloads
- Other NASA Programs
- International Missions with NASA Participation

Sun-Earth Connection Missions
- Major Missions
- Explorers
- International Solar-Terrestrial Physics (ISTP)
- Solar Terrestrial Probe (STP)
- Other NASA Programs
- International Missions with NASA Participation

OFFICE OF SPACE SCIENCE

Grants Programs

Initiative To Develop Education Through Astronomy and Space Science (IDEAS)

The IDEAS grants program is one component of NASA's Office of Space Science Education and Public Outreach Strategy. It is administered by the Space Telescope Science Institute (STScI) on behalf of NASA OSS. As part of the overall OSS E/PO program, the IDEAS grants program provides start-up funding for innovative, creative education and public outreach projects that feature active collaboration between astronomers/space scientists and formal education/informal education professionals. Through this effort, the IDEAS objective is to enhance science, mathematics, and technology education in the United States for K-14 students, teachers, and the general public by promoting partnerships that explore new ways to translate astronomy and space science into contexts that will educate and stimulate the interest of students, teachers, and the general public.

Lead: Ms. Bonnie Eisenhamer, Space Telescope Science Institute, 3700 San Martin Drive, Baltimore, MD 21218.
Contact: Ms. Heather Bradbury, Space Telescope Science Institute, 3700 San Martin Drive, Baltimore MD 21218.
URL: *http://ideas.stsci.edu*
Grants: Astronomy and Science Education for Elementary School Students
Astronomy and Space Science Outreach Programs for DC Public School Students and Teachers
Astronomy Education/Outreach for K-12 and Underrepresented Students and Teachers
Improvement of Elementary School Science Instruction Through Early Teacher Training
It's About Time
Solar Observing: A Model Curriculum for Middle School Teachers and Students
Space Place Access for Community Education—A Worldwide Link
Universe in the Park-Wisconsin
Unraveling the Mysteries of the Universe
Using Astronomy Camp-Ins for Preservice Teacher Development
Video and Classroom Curriculum for DC Public Schools Students and Teachers in Earth and Space Science
What Do Astronomers Do?
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

University Research Centers at Minority Institutions (URC)

The NASA University Research Centers (URCs) at Minority Institutions is an Office of Equal Opportunity Programs (OEOP)-managed program intended to achieve a broad-based, competitive aerospace research capability at Historically Black Colleges and Universities (HBCUs) and Other Minority Universities (OMUs) that will 1) expand the Nation's base for aerospace research and development, 2) foster new aerospace science and technology concepts, 3) develop mechanisms for increased participation by faculty and students of HBCUs and OMUs in the research programs of NASA's science and technology Enterprises, and 4) increase the numbers of underrepresented minorities at HBCUs and OMUs who attain advanced degrees in NASA-related fields. Each URC is a multidisciplinary scientific or engineering research center at the host university that contributes to the research program of one or more of the NASA Strategic Enterprises. OSS provides funding and technical support to URCs that are working in space science areas.

Lead: Dr. Jeffrey Rosendhal, NASA Office of Space Science, Code S, Washington, DC 20546.
E-mail: *jeffrey.rosendhal@hq.nasa.gov*. Phone: 202-358-2470.
URL: *http://mured.nasaprs.com/*
Grants: Center for Automated Space Science

Minority Institution Initiative (MI Initiative)

The OSS/OEOP Minority University Education and Research Partnership Initiative in Space Science is a grants program with the long-term goals of enhancing minority college and university participation in space science and increasing the understanding of science, technology, and the role of research in contemporary society in a broad and diverse segment of the American population. It emphasizes partnerships among OSS, the space science research community, and minority institutions. Projects from 15 minority institutions were selected for funding, beginning in January 2001. These projects cover a wide spectrum of activities, including active participation of minority institution students in NASA space science missions, integration of space science materials into undergraduate courses and precollege outreach programs, development of new space science courses and degree programs, and establishment of new space science faculty positions.

Lead: Dr. Philip Sakimoto, NASA Office of Space Science, Code SB, Washington, DC 20546.
E-mail: *phil.sakimoto@hq.nasa.gov*. Phone: 202-358-0949.

Grants:
- A Space Science Curriculum at Hampton University: Development of a Minor, Faculty Enhancement, and K-14 Outreach
- An Urban Outreach Program in Space Science: A Collaborative Effort between NASA, Hispanic-Serving and Historically Black Universities
- Astromaterials-Astrobiology Teacher Workshops
- Astronomy and Astrophysics Course Development at Salish Kootenai College
- Collision Processes in Astrophysical Plasmas
- Connecting Sun City with Sun-Earth Connections
- Enhancement of the Space Science Research Program at South Carolina State University
- JSC Open House—Space Science
- JSC Outreach to Women and Minorities
- NASA-HBCU Partnership to Enhance Minority Education and Research Participation in the Space Sciences
- New Mexico Connections: Connecting Teachers, Resources, and Research
- New Opportunities Through Minority Initiatives in Space Science
- New York City Space Science Research Alliance
- Partnerships in Astronomy and Astrophysics Education and Research at Southern University
- Scientists Mentoring Astronomy Research Teams of Tomorrow
- South-West Internet Program for the Enhancement of Minority Education
- Space Science Education and Sun-Earth Connection
- Stars on Earth Providing Underrepresented New Mexico High School Students with Research Experience in Space Science & Preparation for MSET in College
- York College Observatory Educational Outreach Program (YCOOP)

Supporting Research and Technology (SRT)

NASA's Office of Space Science (OSS) Supporting Research and Technology (SRT) Program provides research grants for projects that support OSS missions. Each grantee is also offered the opportunity to propose a supplementary Education and Public Outreach project to be conducted in conjunction with the research project. The outcomes of such supplementary E/PO projects are reported here.

Lead: Ms. Rosalyn Pertzborn, NASA Office of Space Science, Code S, Washington, DC 20546.
E-mail: *rpertzbo@hq.nasa.gov*. Phone: 202-358-1953.

URL: *http://spacescience.nasa.gov/education/scientists/index.htm*

Grants:
- A Space Weather Module for Los Alamos Space Science Outreach (LASSO)
- Academic Talent Development Program Grades 6-9
- American Indian Research Opportunities in Solar Physics at Montana State University
- Astromaterials-Astrobiology Student Presentations
- Astromaterials-Astrobiology Curriculum Development
- Astromaterials-Astrobiology Teacher Workshops
- Bringing Solar Astronomy to the Public: A Multi-Faceted Outreach Program at BBSO
- Hands-On Activities in Solar and Stellar Variability
- Internet Outreach for NASA Space Science Missions
- JSC Open House—Space Science
- JSC Outreach to Scientists
- JSC Outreach to Women and Minorities
- Los Alamos Space Science Outreach Program (LASSO)
- Microbes Teacher Workshop
- Outreach for NASA's Solar Missions
- Preparing for Multi-Spacecraft Missions: Auroral Space Time Scales and Magnetotail Assimilation Model
- Project ASTRO—Improving Science Education Through Astronomer-Teacher Partnerships in Grades 3-9
- Regional Planetary Imaging Facilities Open Houses
- Regional Planetary Imaging Facilities Teacher Workshops
- Science Education Gateway (SEGway)
- Solar Convection, Spectroscopy, and Velocity and Acceleration
- Solar Music Teacher Module—Using Helioseismology to See Inside Our Sun
- Space Experiments Facilitated by the NASA Get Away Special (GAS) Payloads
- Support for the Young Engineers and Scientists Program
- Using Space Science Research to Support Physics Learning

Major Partnerships

Passport to Knowledge (P2K)

Passport to Knowledge (P2K) is a series of interactive learning adventures connecting essential life, Earth, space, and physical science concepts with exciting real-world phenomena. P2K uses a powerful, integrated suite of video programs, hands-on activities, and online resources to deliver real science, real scientists, real locations, and real learning, while experiencing some of the most exciting and challenging places on Earth and beyond.

Lead: Mr. Geoffrey Haines-Stiles, Geoff Haines-Stiles Productions, Inc., Morristown, NJ 07960.
E-mail: *ghs@passporttoknowledge.com*. Phone: 973-656-9403.
URL: *passporttoknowledge.com/universe*
Activities: Live From a Black Hole/Live From the Edge of Space and Time
Live From a Black Hole—Video
Live From Mars 2001 and Live From Mars 2002
Live From the Edge of the Universe—Video
Passport to the Solar System

Challenger Center for Space Science Education (Challenger Center)

Challenger Center for Space Science Education is a global not-for-profit education organization. Our mission is to use the excitement of space exploration as a theme to create positive learning experiences that raise students' expectation of success; foster in them a long-term interest in math, science, and technology; and help them develop critical communication, decisionmaking, and team-building skills. Challenger Center works to develop and maintain a scientifically literate world where every individual has a reasonable understanding of science, math, and technology, and the role they play in our lives. During the past 16 years, Challenger Center has proven its commitment to education through a wide variety of innovative educational programs. Each program is designed to help improve math and science scores. Challenger Center employs three astrophysicists who work as both educators and researchers. As researchers, they work part-time focusing on their individual research interests. As educators, they serve as science content reviewers and writers, workshop leaders, featured speakers, and speakers in the classroom and in other venues. Challenger Center's staff scientists reach thousands of educators, students, parents, and members of the general public each year. "Window on the Universe" and "Voyage: A Journey Through Our Solar System" are two of Challenger Center's education and public outreach programs that are funded in part by NASA's Office of Space Science. "Window on the Universe" is an educational initiative that uses the fields of human space flight and the space sciences to engage entire communities in sustained science, math, and technology education. "Voyage" is a permanent, outdoor scale model of our solar system on the National Mall.

Lead: Dr. Jeffrey Goldstein, Challenger Center for Space Science Education, Alexandria, VA 22314.
E-mail: *jgoldstein@challenger.org*. Phone: 703-683-9740.
URL: *http://www.challenger.org*
Activities: Solar System Ambassadors Program
Voyage: A Journey Through Our Solar System
Window on the Universe

Adler Center for Space Science Education (Adler)

The Center for Space Science Education at the Adler Planetarium and Astronomy Museum serves as a nexus between the research and education communities. Its goal is to bring a broad program of astronomy and space science education to the half-million annual visitors to the museum and to reach beyond the traditional museum setting to provide educational support for students, teachers, and families.

Lead: Dr. Paul Knappenberger, Adler Planetarium and Astronomy Museum, 1300 S. Lake Shore Drive, Chicago, IL 60605.
E-mail: *paul@adlernet.org*. Phone: 312-322-0325.
URL: *http://adlerplanetarium.org*
Activities: Astronomy Connections: Gravity and Black Holes Curriculum
Astronomy Connections: Sun-Earth Connection Curriculum
Astronomy Connections: Teacher Professional Development
Black Holes: Into the Dark Abyss StarRider Show
CyberSpace Learning Center
Images of the Infinite: Hubble Space Telescope Sky Show
Solar Storms StarRider Show
Solar System Ambassadors Program

STARBASE

Students Training for Achievement in Research Based on Analytical Space-science Experiences (STARBASE) is a combination of dedicated hardware, professional astronomers, teachers, and students working together in scientific investigations and education. The purpose is to involve motivated high school and college students as direct and integral participants in the research of space scientists. The initial efforts are centered on developing the first two nodes in a network of longitudinally spaced, meter-class, CCD-imaging telescopes that can be operated remotely or robotically over the Internet or operated locally for training and research. A 0.6-meter telescope at Western Kentucky University and the 1.3-meter Remotely Controlled Telescope (RCT) at Kitt Peak National Observatory are being refurbished and automated. A network of universities that share common research and educational interests is being developed, and more than a dozen undergraduate students are currently involved in developing various aspects of STARBASE.

Lead: Dr. Charles McGruder, Western Kentucky University, Dept. of Physics and Astronomy, Bowling Green, KY 42101.
E-mail: *mcgruder@wku.edu*. Phone: 270-745-4357.
URL: *http://starbase.wku.edu*
Activities: Hands-On Universe Workshop
Public Education in Astronomy
STARBASE Astronomical Data Archive
STARBASE Teachers and Students
Training Undergraduate Telescope Operators

OSS Science Center Development (OSS/Sci. Ctr. Dev.)

In keeping with our public outreach goal of "sharing the excitement of space science discoveries with the public," OSS supports a number of major development projects at science centers and planetariums across the country. Such projects typically entail the development or renovation of exhibit galleries or planetariums, coupled with the development of new exhibits, shows, and education programs based on the results of recent NASA Space Science missions and discoveries. These efforts make a substantial contribution to the general public's understanding of science and to communicating to students and the public the new understanding of the universe derived from NASA's space science program.

Lead: Dr. Jeffrey Rosendhal, NASA Office of Space Science, Code S, Washington, DC 20546.
E-mail: *jeffrey.rosendahl@hq.nasa.gov*. Phone: 202-358-2470.
URL: *http://spacescience.nasa.gov/education*
Activities: Explore the Universe Exhibition
Museum of Discovery and Science/NASA Space Education Partnership
Observatory, Planetarium, Theater Project

OSS Outreach Activities (OSS/Outreach)

In keeping with our education outreach goal of "enhancing the quality of education," OSS participates in a number of education and outreach activities at both the regional and national levels. OSS supports a number of regional and national education conferences attended by thousands of educators in math, science, and technology. OSS supports various professional conferences attended by thousands of scientists from all fields of space science. Such activities at these conferences usually entail showcasing an exhibit, distributing educational and outreach material (litho sets, posters, educator guides, strategic plans, an so on), conducting educational workshops, giving keynote speeches, highlighting various space science Web pages, and having NASA employees and scientists answer questions about space science. Finally, OSS staff members participate in more localized events such as conducting talks at local classrooms.

Lead: Mr. Dan Woods, NASA Office of Space Science, SB, Washington, DC 20546.
E-mail: *dwoods@hq.nasa.gov*. Phone: 202-358-0850.
URL: *http://spacescience.nasa.gov/education*
Activities: American Astronomical Society/American Association of Physics Teachers Conference
Association of Science-Technology Centers
International Technology Education Association (ITEA)
National Boy Scout Jamboree
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
OSS Staff Outreach

E/PO SUPPORT NETWORK

Forums

Astronomical Search for Origins Forum (ASO Forum)

The Origins Program is the scientific study of the long chain of events from the birth of the universe in the Big Bang, through the formation of galaxies, stars, and planets, and the chemical elements of life, to the profusion of life on Earth and possibly elsewhere. The overarching program funded by NASA that enables researchers to pursue these questions is called "The Astronomical Search for Origins and Planetary Systems," or Origins for short. The Education Forum is the public gateway to the research results, data, and human expertise behind this quest.

Lead: Dr. Terry Teays, Space Telescope Science Institute, 3700 San Martin Drive, Baltimore, MD 21218.
E-mail: *teays@stsci.edu*. Phone: 410-338-4733.

URL: *http://origins.stsci.edu*

Activities:
American Astronomical Society/American Association of Physics Teachers Conference
Association of Science-Technology Centers
Exceptional Space Science Materials for Exceptional Students
International Technology Education Association (ITEA)
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
Origins Education Forum Evaluation
Origins Education Forum Online Outreach
Origins Education Forum Workshops/Presentations
OSS Representation at the Annual Conference of the Great Lakes Planetarium Association
Products and Services in Support of Scientist Involvement in Education and Public Outreach
Professional Societies of Minority Scientists/OSS Collaboration
Space Science Education Resource Directory
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Solar System Exploration Forum (SSE Forum)

The Office of Space Science Solar System Exploration Education and Public Outreach Forum serves as the entry point and coordinator for education and outreach activities and materials for NASA's Solar System Exploration missions and research activities. Our content includes the planets beyond Earth, comets, asteroids, other planetary bodies, and moons.

Lead: Ms. Leslie Lowes, NASA Jet Propulsion Laboratory, MS 180-109, Pasadena, CA 91109.
E-mail: *Leslie.Lowes@jpl.nasa.gov*. Phone: 818-393-7734.
Dr. Ellis Miner, NASA Jet Propulsion Laboratory, M/S 230-260, Pasadena CA 91109.
E-mail: *Ellis.D.Miner@jpl.nasa.gov*. Phone: 818-354-4450.

URL: *http://sseforum.jpl.nasa.gov*

Activities:
Curriculum Standards Quilt Development and Dissemination
Exceptional Space Science Materials for Exceptional Students
From the Sun to the Star Nations
Girl Scouts of the USA (GSUSA) Partnership
International Technology Education Association (ITEA)
JSC Outreach to Women and Minorities
Making Relations: Boulder Symposium
MarsQuest Planetarium Show
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
Practical Uses of Math and Science
Products and Services in Support of Scientist Involvement in Education and Public Outreach
Professional Societies of Minority Scientists/OSS Collaboration
Solar System Ambassadors Program
Solar System Educator Program
Solar System Exploration Forum and International Planetarium Society Partnership
Solar System Exploration Forum K-12 Formal Educator Professional Development
Solar System Exploration Forum Promotion of Scientist Involvement—DPS
Space Science Education Resource Directory

Space Science Workshops for Educators
Stories in the Sky
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

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Structure and Evolution of the Universe Forum (SEU Forum)

The Structure and Evolution of the Universe (SEU) Education Forum shares the exciting discoveries and knowledge from NASA SEU missions and research programs with educators, students, and the general public. The SEU partnership brings together the rich expertise of scientists, science educators, and education researchers to develop innovative products and programs. Our goal is to contribute to the improvement of precollege science education and increase science literacy at all levels, focusing attention on the human quest to understand the universe and our place in the cosmos.

Lead: Dr. Roy Gould, Harvard-Smithsonian Center for Astrophysics, M.S.71, 60 Garden Street, Cambridge, MA 02138.
E-mail: *rgould@cfa.harvard.edu*. Phone: 617-496-7689.
E-mail: *mdussault@cfa.harvard.edu. Phone:* 617-496-7962.

URL: *http://cfa-www.harvard.edu/seuforum/*

Activities:
Association of Science-Technology Centers
Astronomy Connections: Gravity and Black Holes Curriculum
Astronomy Connections: Teacher Professional Development
Black Holes: Into the Dark Abyss StarRider Show
Cosmic Questions: Our Place in Space and Time
Exceptional Space Science Materials for Exceptional Students
Galaxies in the Classroom
How Fast Do Galaxies Move? An Interactive Lab
Informal Education Web Watering Hole—Space Science Access
MicroObservatory Online Telescopes
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
Professional Societies of Minority Scientists/OSS Collaboration
Public Observing Nights at the Harvard-Smithsonian Center for Astrophysics
SEU Forum Educator Workshops
SEU Forum Support for Informal Science Education
SEU Tours of Harvard-Smithsonian Center for Astrophysics
Space Science Access—Bringing the Universe to Museums and Planetariums
Space Science Education Resource Directory
Universe! Cosmic Journeys to the Edge of Gravity, Space, and Time

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Sun-Earth Connection Forum (SEC Forum)

The Sun-Earth Connection Education Forum shares the exciting discoveries and knowledge from NASA Sun-Earth Connection missions and research programs with educators, students, and the general public. The Sun-Earth Connection partnership brings together the rich expertise of scientists, educators, and museum personnel to develop innovative products and programs. Our goal is to contribute to the improvement of precollege science education and increase science literacy at all levels, focusing attention on the active Sun and its effects on Earth.

Lead: Dr. Richard Vondrak, NASA Goddard Space Flight Center, Code 630, Greenbelt, MD 20771.
E-mail: *vondrak@lepvax.gsfc.nasa.gov*. Phone: 301-286-8112.
Dr. Isabel Hawkins, University of California, Berkeley, Space Science Laboratory, Berkeley, CA 94720.
E-mail: *isabelh@ssl.berkeley.edu*. Phone: 510-643-5662.

URL: *http://sunearth.gsfc.nasa.gov*

Activities:
Association of Science-Technology Centers
Astronomy Connections: Sun-Earth Connection Curriculum
Astronomy Connections: Teacher Professional Development
Exceptional Space Science Materials for Exceptional Students
Exploring the Sun-Earth Connection
Formal Education Systemic Reform Initiatives
From the Sun to the Star Nations
Girl Scout Support
HESSI—Sun Discoveries
Illinois MagNet
International Technology Education Association (ITEA)

Live from Africa—Solar Eclipse
Living with a Star: An Educator Guide with Activities in Sun-Earth Connection Science
Making Sun-Earth Connections—CD
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
OSS Representation at the Annual Conference of the Great Lakes Planetarium Association
Professional Societies of Minority Scientists/OSS Collaboration
Radio JOVE
SEC—Informal Education Community Support
SECEF Astronomy Club
SECEF Classroom Talks
SECEF Educator Internships
SECEF Star Parties
SECEF Support for Student Programs
Solar Storms StarRider Show
Solar System Ambassadors Program
Solar System Exploration Forum Promotion of Scientist Involvement—DPS
Space Science E/PO in the Midwest: Focus on Involvement of Research Scientists
Space Science Education Resource Directory
Space Science Workshops for Educators
Space Weather Center Traveling Exhibit
Sun-Earth Connection Educational Workshop
Sun-Earth Day
The Real Reasons for Seasons: Sun-Earth Connections
The Sun Lithograph
The Sunspots and Lesson Plan—Resource Guide
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Broker/Facilitators

DePaul Broker/Facilitator (DePaul B/F)

The DePaul University Broker/Facilitator assists space scientists and members of the education community in the States of Illinois, Indiana, Iowa, Missouri, Minnesota, and Wisconsin to form partnerships that realize high-leverage opportunities for education and outreach.

Lead: Dr. Lynn Narasimhan, DePaul University, 990 W. Fullerton Avenue, Suite 4400, 990 W. Fullerton, Chicago, IL 60614-2458.
E-mail: *cnarasim@depaul.edu*. Phone: 773-325-1854.

URL: *http://analyzer.depaul.edu/NASABroker/*

Activities:
Astronomy Connections: Gravity and Black Holes Curriculum
Astronomy Connections: Sun-Earth Connection Curriculum
Astronomy Connections: Teacher Professional Development
Black Holes: Into the Dark Abyss StarRider Show
Chicago Teachers' Advisory
CyberSpace Learning Center
Illinois MagNet
Images of the Infinite: Hubble Space Telescope Sky Show
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
OSS Representation at the Annual Conference of the Great Lakes Planetarium Association
Planetarium Learning and Teaching Opportunities
Products and Services in Support of Scientist Involvement in Education and Public Outreach
Professional Societies of Minority Scientists/OSS Collaboration
Solar Storms StarRider Show
Space Science E/PO in the Midwest: Focus on Involvement of Research Scientists
Space Science Education Resource Directory
Space Science for Illinois Teachers

Touch the Universe: A NASA Braille Book of Astronomy
Under the Umbrella Professional Development Conference for Chicago Science Teachers
Wisconsin Data Retreat
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

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Lunar and Planetary Institute Broker/Facilitator (LPI B/F)

This is one of five Brokers/Facilitators for Education and Public Outreach within the NASA OSS Support Network. The 11-State region served includes Texas, Louisiana, Oklahoma, Kansas, Nebraska, South Dakota, North Dakota, New Mexico, Arizona, California, and Hawaii.

Lead: Dr. Kathleen Johnson, Lunar and Planetary Institute, 3600 Bay Area Blvd., Houston, TX 77058-1113.
E-mail: *johnson@lpi.usra.edu*. Phone: 281-244-2014.

URL: *http://www.lpi.usra.edu*

Activities:
Explore! and Fun with Science Library Programs for Youth
FOSS-LPI Solar System Curriculum Workshop
LPI Speakers Bureau
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
Products and Services in Support of Scientist Involvement in Education and Public Outreach
Professional Societies of Minority Scientists/OSS Collaboration
Scientist-Teacher Cooperation Awards
Space Day 2001 at Lunar and Planetary Institute
Space Science and the TEKS
Space Science E/PO in the Midwest: Focus on Involvement of Research Scientists
Space Science Education Resource Directory
Space Science Field Workshops for K-12 Teacher-Scientist Teams
Workshops for Scientists

Ohio Aerospace Institute Broker/Facilitator (OAI B/F)

Provides broker/facilitator services to scientists and educational institutions in the 12-State area of Ohio, Michigan, West Virginia, Pennsylvania, New York, New Jersey, Connecticut, Rhode Island, Massachusetts, New Hampshire, Vermont, and Maine.

Lead: Dr. Larry Cooper, Ohio Aerospace Institute, 22800 Cedar Point Road, Cleveland, OH 44142.
E-mail: *larrycooper@oai.org*. Phone: 513-245-9897.

URL: *http://www.ossbroker.net*

Activities:
Astronomy Connections: Sun-Earth Connection Curriculum
Astronomy Connections: Teacher Professional Development
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
Professional Societies of Minority Scientists/OSS Collaboration
ScaperCon 2001
Solar System Ambassadors Program
Space Science E/PO in the Midwest: Focus on Involvement of Research Scientists
Space Science Education Resource Directory
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

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Southeast Regional Clearinghouse Broker/Facilitator (SERCH B/F)

Fifteen Space Grant Consortia representing Alabama, Arkansas, Delaware, the District of Columbia, Georgia, Florida, Louisiana, Kentucky, Mississippi, Maryland, Puerto Rico, North Carolina, Tennessee, South Carolina, Virginia, and the Virgin Islands have joined together to form the SouthEast Regional ClearingHouse (SERCH). We provide broker/facilitator services to scientists and educational institutions in this 16-State region. Our goals are to develop a network of educators and researchers interested in space science; be an effective interface between researchers and educators in the area of space science; be a primary information and resource clearinghouse for space science data, information, and educational products; support OSS mission scientists in their educational outreach activities; facilitate the modification of OSS materials to meet the needs of diverse educational environments; be a leader in serving exceptional students and the public; and develop an accessible nationwide GIS database that provides spatially related information of targeted NASA educational resources with links to OSS Tracking & Reporting and EDCATS.

Lead: Dr. Cassandra Runyon, College of Charleston, Geology, Charleston, SC 29424.
E-mail: *cass@cofc.edu*. Phone: 843-953-8279.
URL: *http://serch.cofc.edu/serch/*
Activities: Enhancement of the Space Science Research Program at South Carolina State University
Exceptional Space Science Materials for Exceptional Students
Fun with Planetary Geology in the Classroom
Museum of Discovery and Science/NASA Space Education Partnership
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
Observatory, Planetarium, Theater Project
Oceans in Space
Products and Services in Support of Scientist Involvement in Education and Public Outreach
Professional Societies of Minority Scientists/OSS Collaboration
Rock Solid Leaders
SERCH and Space Explorers, Inc.—Regional Space Science Education Workshop
Solar System Ambassadors Program
Solar System Exploration Forum Promotion of Scientist Involvement—DPS
Space Science Education Resource Directory

Space Science Institute Broker/Facilitator (SSI B/F)

The Space Science Institute of Boulder, Colorado, is building on four years of "lessons learned" as a NASA OSS Broker/Facilitator and on its extensive experience as a developer of space science-related education and public outreach (E/PO) products in partnership with scientists and educators. We have been serving the western region (Alaska, Arizona, California, Colorado, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, Washington, Wyoming). Our services bring space science to the E/PO community and E/PO to the space science community, leading to strategically valuable partnerships and activities. Our goals are to support space scientists (emphasizing research institutions), formal education (emphasizing State-based agendas), informal education (emphasizing planetarium associations, Girl Scouts, and traveling exhibits), and underserved populations (emphasizing indigenous and Latino educators). This support includes providing professional development opportunities, facilitating access to and use of exemplary materials, and facilitating E/PO participation and/or partnership. We use new electronic resources, including a CD of resources for scientists in education and a Web-based "Menu of Opportunities for Scientists in Education" (MOSIE).

Lead: Dr. Cherilynn Morrow, Space Science Institute, Boulder, CO 80309.
E-mail: *camorrow@colorado.edu*. Phone: 303-492-7321.
URL: *http://www.spacescience.org*
Activities: Association of Science-Technology Centers
Interactive Exhibits at Community Events
Kinesthetic Astronomy Curriculum Development
MarsQuest Planetarium Show
MarsQuest Traveling Exhibit
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
Products and Services in Support of Scientist Involvement in Education and Public Outreach
Professional Societies of Minority Scientists/OSS Collaboration
Solar System Ambassadors Program
Solar System Exploration Forum Promotion of Scientist Involvement—DPS
Space Science Education Resource Directory
Space Science Workshops for Educators
Space Weather Center Traveling Exhibit
Support for Western Region State Education Leadership
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

ASTRONOMICAL SEARCH FOR ORIGINS MISSIONS

Major Missions

Hubble Space Telescope (HST)

The Office of Public Outreach (OPO) of the Space Telescope Science Institute (STScI) was created to share the amazing discoveries of the Hubble Space Telescope with the American public. We are privileged to be the focal point of public attention for a storied NASA space science mission to which thousands of engineers, programmers, and scientists have devoted their professional gifts. During the last five years, we have developed a multitude of products and programs that have capitalized on the intense interest in Hubble to inform and inspire millions of Americans and many others around the globe.

Lead: Dr. Ian Griffin, Space Telescope Science Institute, Office of Public Outreach, 3700 San Martin Drive, Baltimore, MD 21218.
E-mail: *griffin@stsci.edu*. Phone: 410-338-4567.

URL: *http://oposite.stsci.edu/pubinfo/edugroup/educational-activities.html*

Activities:
American Astronomical Society/American Association of Physics Teachers Conference
Eskimo Nebula
Explore the Universe Exhibition
Galaxy Cluster Abell 2218
Hubble Space Telescope (HST): Amazing Space
Hubble Space Telescope Formal Education
Hubble Space Telescope Informal Education
Hubble Space Telescope Online Outreach
Hubble Space Telescope: New Views of the Universe (version 1)
Hubble Space Telescope: New Views of the Universe (version 2)
Hubble Space Telescope: ViewSpace
Hubble Space Telescope: Workshops/Presentations
Images of the Infinite: Hubble Space Telescope Sky Show
National Boy Scout Jamboree
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
Open Night at the Space Telescope Science Institute (STScI)
Origins Brochure
Origins Education Forum Online Outreach
ScaperCon 2001
Solar System Ambassadors Program
Space Place Web Site
Space Telescope Science Institute: Speakers Bureau
Touch the Universe: A NASA Braille Book of Astronomy
Where Do Stars Come From? And Where Do They Go?
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

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Next Generation Space Telescope (NGST)

Activities:
American Astronomical Society/American Association of Physics Teachers Conference
National Science Teachers Association (NSTA)
NGST Online Outreach
Origins Education Forum Online Outreach

Space Infrared Telescope Facility (SIRTF)

The SIRTF Science Center's E/PO Program is actively promoting public understanding of infrared and other invisible forms of light. We have designed a suite of Web sites, audiovisual products, and classroom activities to achieve our education goals. We are also currently conducting an international naming contest for the SIRTF spacecraft, as well as preparing launch support materials.

Lead: Dr. Michelle Thaller, NASA Jet Propulsion Laboratory, SIRTF Science Center, Mail Stop 220-6, Pasadena, CA 91109.
E-mail: *thaller@ipac.caltech.edu*. Phone: 626-395-8670.

URL: *http://sirtf.caltech.edu*

Activities: American Astronomical Society/American Association of Physics Teachers Conference
Discovery of Infrared Light-The Herschel Experiment
National Science Teachers Association (NSTA)
Origins Education Forum Online Outreach
Scientists Mentoring Astronomy Research Teams of Tomorrow
SIRTF and Young Astronauts
SIRTF Conference Booths
SIRTF Naming Contest
SIRTF Teacher Inservice
SIRTF Teacher Workshops
SIRTF Web Development
SOFIA—Astronomy at 41,000 Feet: Teacher Workshop
Solar System Ambassadors Program
Von Karman Public Lecture Program (SIRTF)
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

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Stratospheric Observatory for Infrared Astronomy (SOFIA)

SOFIA's Education and Public Outreach program contributes to the improvement of the American public's scientific, mathematical, and technological literacy, and to public awareness and understanding of the importance and value of research in science. SOFIA will be a world-class research observatory, designed from the ground up with the capability to allow visiting educators and journalists to closely observe and participate in the research process. SOFIA's E/PO program will bring the excitement, hardships, challenges, discoveries, teamwork, and educational value of the observatory to students (precollege, undergraduate, and graduate education), teachers, and the general public on a national and international scale, as SOFIA is a joint U.S.-German project. Programs include 1) the Airborne Astronomy Ambassadors—trained educators fly on research missions and compose a national network of master educators who conduct teacher workshops and public presentations; 2) the Education Partners Program—SOFIA scientists, observers, instrument builders, engineers, technicians, flight crew and educators partner with teachers in their local communities who may fly on SOFIA; 3) the Science Literacy and Education Program—annual symposia are held at the SOFIA Science and Mission Operations Center for undergraduate instructors, science and technology center staff, and planetarium directors who may fly on SOFIA; 4) SOFIA Visiting Educators—each year, a small number of experienced educators will join the SOFIA E/PO staff as flight facilitators and E/PO outreach personnel; and 5) The SOFIA Web site—the E/PO program will support a public affairs team that works closely with the NASA Office of Public Affairs to communicate SOFIA science effectively. SOFIA is being developed and will be operated for NASA and DLR by Universities Space Research Association (USRA). The E/PO program is being jointly conducted by the Search for Extraterrestrial Intelligence (SETI) Institute, the Astronomical Society of the Pacific, and members of the USRA SOFIA team.

Lead: Mr. Michael Bennett, Astronomical Society of the Pacific (ASP), 390 Ashton Avenue, San Francisco, CA 94112.
E-mail: *mbennett@astrosociety.org*. Phone: 650-604-2128.

URL: *http://sofia.arc.nasa.gov*

Activities: American Astronomical Society/American Association of Physics Teachers Conference
NASA Ames Research Center Air Show
National Science Teachers Association (NSTA)
Origins Education Forum Online Outreach
Partners in Science Education: SOFIA's Education and Public Outreach Program
SOFIA Classroom Visits by Scientists
SOFIA Education Partners Program
SOFIA Informal Education Presentations
SOFIA Lithograph
SOFIA Presentation Folder
SOFIA Seminar: Introduction to Airborne Astronomy
SOFIA Technical Brochure
SOFIA—Astronomy at 41,000 Feet: Teacher Workshop

Explorers

Far-Ultraviolet Spectroscopic Explorer (FUSE)

Activities: American Astronomical Society/American Association of Physics Teachers Conference
Exploring Our Universe: From the Classroom to Outer Space
FUSE 2001 Teacher Internship at JHU
FUSE Outreach and Education Web Page
National Science Teachers Association (NSTA)
Origins Education Forum Online Outreach
Paper Model of FUSE Satellite
The FUSE Satellite: Observing from Space
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Full-sky Astrometric Mapping Explorer (FAME)

FAME is an optical space telescope designed to determine the positions, distances, motions, brightnesses, and colors of 40 million stars in our galactic neighborhood. The FAME E/PO Program has four main components: 1) The FAME team is partnering with the Harvard/Smithsonian Center for Astrophysics Science Education Department (SED) to establish a FAME Master Teacher Program by recruiting 50 grade 5-8 classroom educators as Master Teachers to attend FAME workshops at SED. These educators will be prepared to lead interdisciplinary, mathematics-based space science workshops in schools and make presentations at major national, regional, and State science and mathematics education conferences or planetarium conventions. The theme of the school workshops is "The Size and Distance Scale of the Galaxy." The program will include astronomy concepts such as parallax, standard candles, and "nature of science" themes embedded in FAME, including the nature of evidence and inference, as well as the interpretation of data; 2) Harvard CfA/SED will also develop and disseminate a planetarium program focused on astrometric measurements for use in small planetariums with students and general audiences, including complementary classroom materials for use with students before and after they participate in the planetarium program; 3) As part of its public outreach component, FAME is partnering with the Carnegie Academy of Science Education (CASE) of the Carnegie Institute of Washington to produce interactive, informational kiosks at approximately 100 libraries around the country. These kiosks will be used on a rotating basis with NASA's Messenger and Astrobiology missions and will be designed for wide geographic distribution, including to underprivileged groups; and 4) The FAME Web site and a variety of other programs will also be designed to encourage minority participation.

Lead: Dr. Steven Dick, United States Naval Observatory, Public Affairs Office, 3450 Massachusetts Avenue NW, Washington, DC 20392.
E-mail: *dick.steve@usno.navy.mil*. Phone: 202-762-0379.
URL: *http://www.usno.navy.mil/FAME/*
Activities: American Astronomical Society/American Association of Physics Teachers Conference
FAME: Exploring 40 Million Stars in Your Neighborhood Brochure
Origins Education Forum Online Outreach
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Navigator

Navigator Program (Navigator)

The Navigator projects are united in their goal to find and characterize planets, like Earth, in orbit around stars other than the Sun. Collectively, they represent a voyage of unprecedented scope and ambition, promising insight into humankind's most timeless questions: "Where did we come from?" and "Are we alone?" The Navigator Program currently encompasses five existing projects: The Keck Interferometer (science operation starting 2002) will search for planetary systems from their astrometric signature and emitted light and will characterize the environment around nearby stars. The StarLight project (to launch in 2005) will develop and test technologies for interferometric observations in space. The Space Interferometry Mission (to launch in 2009) will determine the positions and distances of stars several hundred times more accurately than any previous observations. Terrestrial Planet Finder (to launch in 2012) will be capable of detecting and characterizing Earth-like planets around as many as 200 stars up to 45 light-years away. The Interferometry Science Center will perform data analysis and user support for all interferometry projects within the Navigator program.

Lead: Dr. Rudolf Danner, NASA Jet Propulsion Laboratory, Pasadena, CA 91109.
E-mail: *Rudolf.Danner@jpl.nasa.gov*. Phone: 818-393-4877.
URL: *http://sim.jpl.nasa.gov, http://tpf.jpl.nasa.gov*
Activities: American Astronomical Society/American Association of Physics Teachers Conference

From the Outer Planets to the Inner City
Navigator Workshops/Presentations
New Opportunities Through Minority Initiatives in Space Science
Origins Education Forum Online Outreach
Products and Services in Support of Scientist Involvement in Education and Public Outreach
Taking the Measure of the Universe Exhibit and Mini-Demos
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

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Keck Interferometer (Keck)

Keck Interferometer participates in the overall Navigator Education and Public Outreach Program.

Lead: Dr. Rudolf Danner, NASA Jet Propulsion Laboratory, 301-486, Pasadena, CA 91109.
E-mail: *Rudolf.Danner@jpl.nasa.gov*. Phone: 818-393-4877.

Activities: American Astronomical Society/American Association of Physics Teachers Conference
Blinded by the Light!
Earth and Space Images for the Classroom
National Science Teachers Association (NSTA)
Navigator Workshops/Presentations
Origins Brochure
Origins Education Forum Online Outreach
OSS Staff Outreach
Space Place Contributions to ITEA's "The Technology Teacher" Magazine
Space Place Web Site

Planetary Imager (PI)

Activities: American Astronomical Society/American Association of Physics Teachers Conference
Origins Education Forum Online Outreach

Space Interferometry Mission (SIM)

The Space Interferometry Mission (SIM) participates in the overall Navigator Education and Public Outreach Program.

Lead: Dr. Rudolf Danner, NASA Jet Propulsion Laboratory, 301-486, Pasadena, CA 91109.
E-mail: *Rudolf.Danner@jpl.nasa.gov*. Phone: 818-393-4877.

Activities: American Astronomical Society/American Association of Physics Teachers Conference
From the Outer Planets to the Inner City
Girl Scouts of the USA (GSUSA) Partnership
National Science Teachers Association (NSTA)
Navigator Workshops/Presentations
Origins Education Forum Online Outreach
Solar System Ambassadors Program
Space Interferometry Mission Brochure
Space Place Web Site
Taking the Measure of the Universe
Taking the Measure of the Universe Exhibit and Mini-Demos
Taking the Measure of the Universe Workshops
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

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Starlight [New Millennium] (ST-3)

The Starlight (ST3) mission participates in the overall Navigator program.

Lead: Dr. Rudolf Danner, NASA Jet Propulsion Laboratory, 301-486, Pasadena, CA 91109.
E-mail: *Rudolf.Danner@jpl.nasa.gov*. Phone: 818-393-4877.

URL: *http://starlight.jpl.nasa.gov*

Activities: American Astronomical Society/American Association of Physics Teachers Conference
Club Space Place Activities
Earth and Space Images for the Classroom
National Science Teachers Association (NSTA)
Navigator Workshops/Presentations

Origins Brochure
Origins Education Forum Online Outreach
Space Place Web Site
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Terrestrial Planet Finder (TPF)

Terrestrial Planet Finder participates in the overall Navigator Education and Public Outreach Program.

Lead: Dr. Rudolf Danner, NASA Jet Propulsion Laboratory, 301-486, Pasadena, CA 91109.
E-mail: *Rudolf.Danner@jpl.nasa.gov*. Phone: 818-393-4877.

URL: *http://tpf.jpl.nasa.gov*

Activities: American Astronomical Society/American Association of Physics Teachers Conference
National Science Teachers Association (NSTA)
Navigator Workshops/Presentations
Origins Education Forum Online Outreach
Solar System Ambassadors Program
Terrestrial Planet Finder Brochure

Other NASA Programs

NASA Astrobiology Institute (NAI)

The NASA Astrobiology Institute (NAI) is composed of 15 lead teams of varying scientific expertise from institutions around the country. Second only to providing a collaborative environment for research, training the next generation of researchers and communicating the science of astrobiology are important aspects of NAI's mission. NAI has a vigorous program in education and public outreach (E/PO). Aligned with NASA's Strategic and Implementation Plans for education, the program connects scientists with students, teachers, museums, the media, and the general public in exploring astrobiology. Efforts in E/PO vary from team to team, and they often include vastly different purposes, audiences, and outcomes as well. Expertise varies from team to team in different scientific disciplines, as do the E/PO programs and projects. However, the individual teams rely on one another to fill in content that falls outside of their own expertise. NAI Central's E/PO program facilitates connections between the teams so that the field of astrobiology is accurately and comprehensively represented in the projects and products. In addition to work on the Educator Resource Guide, E/PO leads and researchers direct and participate in creating, promoting, and producing products and projects that educate in many ways. Between July 2000 and June 2001, the E/PO team participated in 28 workshops for educators, students, professional scientists, and the general public. In addition, 15 astrobiology courses were offered at universities for graduate, undergraduate, high school, and professional groups. The lead teams also participated in 55 general-public events. Unique programs include 15 media projects utilizing television, radio, video, and publications, as well as two expeditions involving educators and scientists. As the field of astrobiology takes shape in the scientific community, it is also being formed in the minds of our students, teachers, and the general public.

Lead: Ms. Krisstina Wilmoth, NASA Astrobiology Institute, MS 240-1, Ames Research Center MS 240-1, Moffett Field, CA 94035.
E-mail: *kwilmoth@mail.arc.nasa.gov*. Phone: 650-604-6137.

URL: *http://nai.arc.nasa.gov*

Activities: "Living in the Microbial World"—Teacher Enhancement Workshop
American Astronomical Society/American Association of Physics Teachers Conference
Astrobiology at UCLA: An Integrated Multidisciplinary Approach to Research and Education
Astrobiology in Your Classroom—Life on Earth . . . and Elsewhere?
Astrobiology Superstars
Astrobiology: Discovering New Worlds of Life
Astrobiology: Palo Alto Partnership
Astrobiology: The Search For Life
Astrobiology: The Search for Water Interactive Educational Book
Astromaterials-Astrobiology Curriculum Development
Astromaterials-Astrobiology Teacher Workshops
Astroventure
Capital Science Lectures
Carnegie Academy for Science Education (CASE) Summer Institute
Cue Cards
JSC Astrobiology Classroom Activities Development
JSC Open House—Space Science

JSC Outreach to Scientists
JSC Outreach to Women and Minorities
Marine Science Institute
Micro*scope
Microbes Astrobiology Exhibit
Microbes Teacher Workshop
NAI Lectures and Interviews
National Science Teachers Association (NSTA)
NSTA Presentation
Origins Education Forum Online Outreach
Production and Distribution of an Astrobiology Magazine Supplement
Professional Development Workshop: Molecular Biological Approaches to Looking at Microbial Diversity and Evolution
Script Reviewer—DNA Files Radio Program on Astrobiology
Snowball Earth
Space Day 2001 at Penn State
Space Science Workshops for Educators
Teacher Workshop—Astrobiology, the Origins and Early Evolution of Life
Undergraduate Courses in Astrobiology
Voyages Through Time Field Test
WISE WEEK—Science Projects in Astrobiology
Women in Science and Engineering Research (WISER)
Yellowstone National Park Interpretive Program
Young Astronauts

Two Micron All-Sky Survey (2MASS)

Activities: American Astronomical Society/American Association of Physics Teachers Conference
Origins Education Forum Online Outreach
Scientists Mentoring Astronomy Research Teams of Tomorrow

SOLAR SYSTEM EXPLORATION MISSIONS

Major Missions

Solar System Exploration Theme Lead (SSE Theme)

The Solar System Theme Lead in the NASA Jet Propulsion Laboratory (JPL) Office of Communications and Education coordinates the activities of JPL's solar system exploration mission outreach coordinators and specialists in media relations, television production, Internet services, and education (both formal and informal), as well as the science data analysis and research activities.

Lead: Ms. Alice Wessen, NASA Jet Propulsion Laboratory, Mail Stop 233-201, Pasadena, CA 91109.
E-mail: *Alice.wessen@jpl.nasa.gov*. Phone: 818 354-4930.

Activities: Asteroids Lithograph
Comets Lithograph
Curriculum Standards Quilt Development and Dissemination
Earth Lithograph
Girl Scouts of the USA (GSUSA) Partnership
International Technology Education Association (ITEA)
JPL Open House
Jupiter Lithograph
Live From Mars 2001 and Live From Mars 2002
Mars Lithograph
MarsQuest Planetarium Show
Mercury Lithograph
Moons of Jupiter Lithograph
Neptune Lithograph
Passport to the Solar System

Pluto and Charon Lithograph
Saturn Lithograph
Solar System Ambassadors Program
Solar System Educator Program
Solar System Lithograph Set
Space Science Workshops for Educators
The Moon Lithograph
The Sun Lithograph
Uranus Lithograph
Venus Lithograph

Cassini/Huygens Probe

The Cassini-Huygens E/PO mission is dedicated to bringing the excitement of the Cassini Mission and the Saturn System to audiences throughout the nation and abroad. Educational activities, cooperative educator programs, educator conferences, public Web access, media support and releases, museum participation, and the Cassini Speakers' group are just a few of the ways we seek to engage the public in this multinational exploration program to Saturn.

Lead: Mr. Stephen Edberg, NASA Jet Propulsion Laboratory, 230-205, Pasadena, CA 91109.
E-mail: *stephen.edberg@jpl.nasa.gov*. Phone: 818-354-6085.

URL: *http://www.jpl.nasa.gov/cassini*

Activities:
Cassini Classroom Visits
Cassini Educator Workshops
Cassini Mission Overview and Current Status
Cassini Sky Observing and Star Parties
Curriculum Standards Quilt Development and Dissemination
From the Outer Planets to the Inner City
Girl Scouts of the USA (GSUSA) Partnership
International Technology Education Association (ITEA)
JPL Open House
NASA Outdoor Education Program
National Boy Scout Jamboree
National Science Teachers Association (NSTA)
Passport to the Solar System
Planetary Observing
Solar System Ambassadors Program
Solar System Educator Program
Solar System Exploration Forum and International Planetarium Society Partnership
Space Place Web Site
Space Science Workshops for Educators
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

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Galileo

The Galileo Mission has a six-year legacy of exploration at Jupiter. Since arriving at Jupiter in 1995, the Galileo spacecraft has orbited the planet and its moons more than 30 times. Ongoing volcanic activity on Io, a magnetic field at Ganymede, and water on Europa are only a few of the thought-provoking discoveries made during Galileo's mission. Educational activities, Web access, information, media support, and educator and student conferences compose a sampling of the engaging and exciting ways that Galileo Outreach continues to reach out into the community to bring Jupiter to people around the world.

Lead: Ms. Shannon McConnell, NASA Jet Propulsion Laboratory, 230-101, Pasadena, CA 91109.
E-mail: *shannon.mcconnell@jpl.nasa.gov*. Phone: 818-393-5815.

URL: *http://galileo.jpl.nasa.gov*

Activities:
Curriculum Standards Quilt Development and Dissemination
Earth and Space Images for the Classroom
From the Outer Planets to the Inner City
Galileo Career Fairs and Classroom Visits
Galileo Educator Workshops and Conferences
Galileo Mission Status and Overview Briefings
International Technology Education Association (ITEA)
JPL Open House

National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
Passport to the Solar System
Small Bodies of Our Solar System
Solar System Ambassadors Program
Solar System Educator Program
Solar System Exploration Forum and International Planetarium Society Partnership
Solar System Exploration Forum K-12 Formal Educator Professional Development
Space Place Newspaper Contributions
Space Place Web Site
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Discovery

Discovery Program Support Office (DPSO)

The Discovery Program's E/PO program involves working in collaboration with the Discovery missions in a variety of ways to help make connections and coordinate efforts among the missions and the Solar System Exploration Forum. The Program provides ongoing advice and support for mission E/PO activities. Another effort involves promoting the Discovery Program and its missions through a Web site, quarterly newsletters, presentations, and informational products.

Lead: Ms. Shari Asplund, NASA Jet Propulsion Laboratory, 156-230, Pasadena, CA 91109.
E-mail: *shari.e.asplund@jpl.nasa.gov*. Phone: 818-354-7280.
URL: *http://discovery.nasa.gov*
Activities: Curriculum Standards Quilt Development and Dissemination
Discovery Program Web Site
International Technology Education Association (ITEA)
JPL Open House
NASA Outdoor Education Program
Solar System Ambassadors Program
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Analyzer of Space Plasma and Energetic Atoms [on Mars Express] (ASPERA-3)

Activities: JPL Open House
Solar System Ambassadors Program

Comet Nucleus Tour (CONTOUR)

The Education and Public Outreach Efforts of the CONTOUR mission are aimed at bringing the thrill of exploration and the wonder of discovery into classrooms and homes through unique educational experiences. We invite teachers, students, and the public to participate in scientific inquiry, discovery, and insight into the complex and awesome nature of comets. Through media, the Internet, and classroom curricula, we hope to reach out to the educational community and the public to inspire their curiosity and satisfy their interests in the study of comets.

Lead: Ms. Laura Lautz, Cornell University, 310 Space Sciences Building, Ithaca, NY 14853.
E-mail: *lautz@astro.cornell.edu*. Phone: 607-254-4973.
URL: *http://www.contour2002.org/*
Activities: CONTOUR Mission Video
CONTOUR Pamphlet
CONTOUR Public Lectures
CONTOUR Student Involvement
Curriculum Standards Quilt Development and Dissemination
International Technology Education Association (ITEA)
JPL Open House
National Science Teachers Association (NSTA)
Passport to the Solar System
Solar System Ambassadors Program

Deep Impact

The Deep Impact Mission is the first effort to make a crater in a comet and look deep inside searching for clues to the formation of the solar system. The mission is unique because observation of the encounter between the comet and the Deep

Impact spacecraft will be observed in near-real-time both from space and from Earth. This provides many opportunities and partnerships for outreach, like near-real-time viewing across the country, and relationships with organizations like the amateur astronomers. Deep Impact E/PO goals are to provide the excitement of working in the world of space science; to engage the audience in an approach to science, mathematics, and engineering through the process of inquiry and discovery; to demonstrate the symbiotic relationship among science, mathematics, and technology; and to demonstrate the importance of thinking and reasoning as a team in all mission phases. The targeted audiences include students (elementary, middle, high school, and colleges), educators (preservice and inservice), underserved students (home school, Pacific Islanders, Elderhostel, Native American, underrepresented minorities, female, and special needs), and the general public (museum and planetarium attendees, media viewers, organized groups, and families).

Lead: Dr. Lucy McFadden, University of Maryland, College Park, MD 20742.
E-mail: *mcfadden@astro.umd.edu*. Phone: 301-405-2081.

URL: *http://deepimpact.jpl.nasa.gov*

Activities:
- Collaborative Decisionmaking Activity
- Curriculum Standards Quilt Development and Dissemination
- Deep Impact Amateur Astronomer Outreach
- Deep Impact Classroom Presentations
- Deep Impact Color Page
- Deep Impact Educator Workshops
- Deep Impact Public Talks
- Deep Impact Video Clips
- Deep Impact Web Site
- Excavating Cratering
- From the Sun to the Star Nations
- Girl Scouts of the USA (GSUSA) Partnership
- International Technology Education Association (ITEA)
- JPL Open House
- Small Telescope Science Program Web Site
- Solar System Ambassadors Program
- Solar System Educator Program

Genesis

The Genesis mission seeks to determine the original building blocks of the solar system. It does this by collecting particles from the solar wind for over two years while in a halo orbit between the Sun and Earth at the L1 Lagrangian point. The solar wind material will be returned to Earth in a capsule that will be caught in mid-air by a special helicopter. The materials will be stored in a clean room built for this mission at NASA Johnson Space Center (JSC), where the abundances of isotopes will be measured in new state-of-the art facilities. The Genesis E/PO program is also state of the art. The main contractor, and a partner in the mission, is McREL, who will develop our prime materials and our Web site and assist us in educator presentations. The mission also has several student-based research efforts associated with it. One is Project SUN (Students Understanding Nature), a monitoring program for visual and ultraviolet surface radiation. Two other projects are being initiated in partnership with other missions, scientists, and universities to determine any possible correlations between changes in the solar wind, aurorae, and surface radiation.

Lead: Dr. Gilbert Yanow, NASA Jet Propulsion Laboratory, 264-370, Pasadena, CA 91109.
E-mail: *gilbert.yanow@jpl.nasa.gov*. Phone: 818-354-8060.

URL: *http://genesismission.jpl.nasa.gov*

Activities:
- Clean Room Technology—NASA Genesis Mission
- Genesis Chautauqua Program
- Genesis Conference Workshops
- Genesis Education CD
- Genesis Education Event Exhibits
- Genesis Public Lectures
- Genesis Student Enrichment
- International Technology Education Association (ITEA)
- JPL Open House
- NASA Outdoor Education Program
- National Science Teachers Association (NSTA)
- Solar System Ambassadors Program
- Solar System Exploration Forum and International Planetarium Society Partnership

Lunar Prospector

Activities: International Technology Education Association (ITEA)
JPL Open House

Mercury Surface, Space Environment, Geochemistry and Ranging (MESSENGER)

Lead: Ms. Stephanie Stockman, NASA Goddard Space Flight Center, Science Systems and Applications, Inc., Code 921, Greenbelt, MD 20771.
E-mail: *stockman@core2.gfsc.nasa.gov*. Phone: 301-614-6457.
URL: *http://sd-www.jhuapl.edu/MESSENGER/*
Activities: Carnegie Academy for Science Education (CASE) Summer Institute
Curriculum Standards Quilt Development and Dissemination
International Technology Education Association (ITEA)
JPL Open House
MESSENGER Education Presentations and Classroom Visits
MESSENGER Public Outreach Presentations
National Science Teachers Association (NSTA)
Solar System Ambassadors Program
Window on the Universe

Near-Earth Asteroid Rendezvous (NEAR)

Lead: Ms. Kerri Beisser, Johns Hopkins Applied Physics Laboratory, Bldg. 4-262, 11100 Johns Hopkins Road, Laurel, MD 20723-6099.
E-mail: *kerri.beisser@jhuapl.edu*. Phone: 443-778-6050.
URL: *http://near.jhuapl.edu*
Activities: International Technology Education Association (ITEA)
JPL Open House
National Science Teachers Association (NSTA)
NEAR Events/Exhibits at Science Centers/Museums
NEAR Offsite Classroom Visits
NEAR Public Outreach
NEAR Senior Citizen Outreach
NEAR Special Interest Groups
NEAR Teacher Training
NEARlink Program
Passport to the Solar System
Solar System Ambassadors Program
Solar System Exploration Forum and International Planetarium Society Partnership

Stardust

Lead: Ms. Aimee Whalen, NASA Jet Propulsion Laboratory, M/S 264-379, Pasadena, CA 91109.
E-mail: *aimee.l.whalen@jpl.nasa.gov*. Phone: 818-354-3245.
URL: *http://stardust.jpl.nasa.gov*
Activities: Curriculum Standards Quilt Development and Dissemination
From the Sun to the Star Nations
International Technology Education Association (ITEA)
JPL Open House
National Science Teachers Association (NSTA)
Passport to the Solar System
Small Bodies of Our Solar System
Solar System Ambassadors Program
Solar System Educator Program
Stardust Conference Participation
Stardust Media
Stardust Museums and Planetarium Exhibits

Mars Exploration Program

Mars Public Engagement (Mars E/PO)

Mars Public Engagement includes all Mars-related E/PO products and activities. All missions in the Mars Program are covered under this broader, thematic umbrella for greater leverage through shared costs and infrastructures.

Lead: Ms. Michelle Viotti, NASA Jet Propulsion Laboratory, MS 264-438, Pasadena, CA 91109.
E-mail: *mviotti@pop.jpl.nasa.gov*. Phone: 818-354-8774.

URL: *http://mars.jpl.nasa.gov*

Activities:
- Curriculum Standards Quilt Development and Dissemination
- International Technology Education Association (ITEA)
- JPL Open House
- Live From Mars 2001 and Live From Mars 2002
- Mars Classroom Visits
- Mars Curator/Docent Professional Development
- Mars Educational Product Development/Dissemination
- Mars Educator Workshops
- Mars Exploration Program Web site
- Mars Lithograph
- Mars Media and Visualizations
- Mars Model Loans
- Mars Open Houses
- Mars Robotics Education
- Mars Speaker Support
- Mars Student Support
- Mars Tours
- Mars Web Site
- MarsQuest Planetarium Show
- MarsQuest Traveling Exhibit
- Passport to the Solar System
- Solar System Ambassadors Program
- Solar System Educator Program
- Space Science Workshops for Educators

Mars Global Surveyor (MGS)

Activities:
- From the Outer Planets to the Inner City
- International Technology Education Association (ITEA)
- JPL Open House
- Live From Mars 2001 and Live From Mars 2002
- Mars Classroom Visits
- Mars Curator/Docent Professional Development
- Mars Educational Product Development/Dissemination
- Mars Educator Workshops
- Mars Media and Visualizations
- Mars Model Loans
- Mars Open Houses
- Mars Robotics Education
- Mars Speaker Support
- Mars Student Support
- Mars Tours
- Mars Web Site
- MarsQuest Traveling Exhibit
- National Boy Scout Jamboree
- National Council of Teachers of Mathematics (NCTM)
- National Science Teachers Association (NSTA)
- Passport to the Solar System
- Solar System Ambassadors Program

Solar System Educator Program
Solar System Exploration Forum and International Planetarium Society Partnership
Solar System Exploration Forum K-12 Formal Educator Professional Development
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

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2001 Mars Odyssey

Activities:
From the Outer Planets to the Inner City
From the Sun to the Star Nations
International Technology Education Association (ITEA)
JPL Open House
Live From Mars 2001 and Live From Mars 2002
Mars Classroom Visits
Mars Curator/Docent Professional Development
Mars Educational Product Development/Dissemination
Mars Educator Workshops
Mars Media and Visualizations
Mars Model Loans
Mars Open Houses
Mars Robotics Education
Mars Speaker Support
Mars Student Support
Mars Tours
Mars Web Site
MarsQuest Traveling Exhibit
National Boy Scout Jamboree
National Science Teachers Association (NSTA)
Passport to the Solar System
Solar System Ambassadors Program
Solar System Educator Program
Solar System Exploration Forum and International Planetarium Society Partnership
Solar System Exploration Forum K-12 Formal Educator Professional Development

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2003 Mars Exploration Rovers (MER)

Activities:
From the Outer Planets to the Inner City
From the Sun to the Star Nations
GAVRT—Mars Radar Project
International Technology Education Association (ITEA)
JPL Open House
Live From Mars 2001 and Live From Mars 2002
Mars Classroom Visits
Mars Curator/Docent Professional Development
Mars Educational Product Development/Dissemination
Mars Educator Workshops
Mars Media and Visualizations
Mars Model Loans
Mars Open Houses
Mars Robotics Education
Mars Speaker Support
Mars Student Support
Mars Tours
Mars Web Site
MarsQuest Traveling Exhibit
National Boy Scout Jamboree
Passport to the Solar System
Solar System Ambassadors Program
Solar System Educator Program

Sagan Memorial Station (Mars Pathfinder)

Activities: Earth and Mars Comparison Poster
Mars Activities: Hands-On Activities for K-5 Classrooms
Mars Activities: Teacher Resources and Classroom Activities
Mars Classroom Activities and Resources CD

Outer Planets Program

Outer Planets Education and Public Outreach Program (OP E/PO)

The Outer Planets Program consists of a roadmap of missions in search of organic-rich environments in the outer planetary regions of the solar system. A refocusing of the Outer Planets Program during the past year resulted in concentration on the Europa Orbiter while the Pluto/Kuiper Belt Express mission was undergoing substantial revisions.

Lead: Mr. Richard Shope III, NASA Jet Propulsion Laboratory, M/S 301-335, Pasadena, CA 91109.
E-mail: *rick.shope@jpl.nasa.gov*. Phone: 818-354-3812.
URL: *http://www.jpl.nasa.gov/missions/future/europaorbiter.html*
Activities: Curriculum Standards Quilt Development and Dissemination
From the Outer Planets to the Inner City
From the Sun to the Star Nations
International Technology Education Association (ITEA)
JPL Open House
NASA Outdoor Education Program
Solar System Ambassadors Program
Solar System Educator Program
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Europa Orbiter

Europa Orbiter invites all Americans—indeed, all humanity—to participate in the creation of new knowledge by providing equity of access and excellence of inquiry, deepening understanding of the nature of science in the experience of exploring Europa. The goal is to devise ways to effectively engage teachers, students, and the general public in the experience of exploring Europa as part of the larger experience of space exploration. Europa's E/PO effort embraces science and technology questions and invites direct participation in every aspect of this space exploration and discovery adventure, organized around the following four active inquiry themes: 1) An Ice Experience—Comparing Ices on Earth, Europa, and Other Worlds; 2) An Ocean Experience—Searching for Evidence of an Ocean on Europa; 3) A Planetary System Experience—Jupiter's Radiant Magnetosphere and Gravity Field; and 4) An Organic-Rich Experience—Exploring a Potentially Organic-Rich World. Europa's nationwide E/PO effort creates and implements validated outreach innovations for community and education services that achieve the following objectives in response to assessments of diverse audience needs: 1) to establish equity of access to Europa exploration via an active online exploration and learning environment that brings Europa to the world's fingertips and is accessible to all; 2) to invite the public to experience Europa and related science themes via informal science learning events such as observation of the skies at community and family skywatching events, as well as other informal science learning events in a context of scientific and cultural awareness; and 3) to engage participation in Europa inquiry via direct scientist, engineer, and science educator interactions with academically diverse learners in formal and informal education settings, in tandem with programs to enhance teacher-adapted educational materials and workshops, particularly for community and after-school enrichment programs.

Lead: Mr. Richard Shope III, NASA Jet Propulsion Laboratory, M/S 301-335, Pasadena, CA 91109.
E-mail: *rick.shope@jpl.nasa.gov*. Phone: 818-354-3812.
URL: *http://www.jpl.nasa.gov/missions/future/europaorbiter.html*
Activities: Community Access to Space Exploration—Europa Orbiter
From the Outer Planets to the Inner City
From the Sun to the Star Nations
International Technology Education Association (ITEA)
JPL Open House
Solar System Ambassadors Program
Solar System Educator Program

Pluto/Kuiper Belt Mission (PKB)

A new announcement of opportunity (AO) to explore Pluto has been released and is currently in process at this writing. Pluto/Kuiper Belt Mission E/PO has been suspended pending the outcome of this AO.

Lead: Mr. Richard Shope III, NASA Jet Propulsion Laboratory, M/S 301-335, Pasadena, CA 91109.
E-mail: *rick.shope@jpl.nasa.gov*. Phone: 818-354-3812.
URL: *http://sse.jpl.nasa.gov/missions/pluto_missns/pluto-plkui.html*
Activities: International Technology Education Association (ITEA)
JPL Open House
Solar System Ambassadors Program
Solar System Educator Program
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Other NASA Programs

Deep Space 1 [New Millennium] (DS-1)

Activities: Club Space Place Activities
Curriculum Standards Quilt Development and Dissemination
Girl Scouts of the USA (GSUSA) Partnership
International Technology Education Association (ITEA)
JPL Open House
Solar System Ambassadors Program
Space Place Contributions to ITEA's "The Technology Teacher" Magazine
Space Place Newspaper Contributions
Space Place Web Site
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Deep Space Mission System (DSMS)

The Deep Space Mission System includes the Deep Space Network, which is the two-way communication link between Earth and robotic spacecraft exploring the solar system. The educational focus of E/PO is the Goldstone Apple Valley Radio Telescope (GAVRT) project where students control a 34-meter radio telescope taking, analyzing, and reporting data, plus the production of lithos and flyers describing telecommunications, radio astronomy, and how we obtain images of distant planets. We participate in educational conferences and public forums with exhibits and speakers. We support JPL's Ambassador, Solar System Educators, and VOICES programs. We contribute to the Space Place Web site and have an active Web site for public information and educational materials.

Lead: Ms. Shirley Wolff, NASA Jet Propulsion Laboratory, 303-401, Pasadena, CA 91109.
E-mail: *shirley.e.wolff@jpl.nasa.gov*. Phone: 818-354-4069.
URL: *http://deepspace.jpl.nasa.gov/dsn/*
Activities: Deep Space Network Public Outreach
Deep Space Network Web Pages
From the Outer Planets to the Inner City
From the Sun to the Star Nations
GAVRT—Cassini JMOC
GAVRT—Jupiter Quest
GAVRT—Mars Radar Project
GAVRT—Variable Quasar Project
Girl Scouts of the USA (GSUSA) Partnership
Goldstone Apple Valley Radio Telescope Project (GAVRT)
International Technology Education Association (ITEA)
JPL Open House
Solar System Ambassadors Program
Solar System Educator Program
Space Place Newspaper Contributions

Near-Earth Asteroid Tracking (NEAT)

Activities: International Technology Education Association (ITEA)
JPL Open House

Astromaterials Program (Astromaterials)

The NASA Johnson Space Center (JSC) Astromaterials E/PO program provides education and outreach coordination for sample curation and astromaterials—planetary science research on rocky bodies. The program is based on collaborations between JSC scientists and educators. The main projects include 1) development of classroom activities in partnership with K-12 teachers, and conducting workshops to introduce those activities; 2) collaboration with two minority universities on a citywide program of outreach and student/teacher training in space science in Houston; and 3) development of exhibits and planetarium shows in partnership with museums.

Lead: Dr. Marilyn Lindstrom, NASA Johnson Space Center, SR Astromaterials Research, 2101 NASA Road 1, Houston, TX 77058.
E-mail: *marilyn.m.lindstrom1@jsc.nasa.gov*. Phone: 281-483-5135.

URL: *http://ares.jsc.nasa.gov*

Activities:
- Astromaterials-Astrobiology Student Presentations
- Astromaterials-Astrobiology Curriculum Development
- Astromaterials-Astrobiology Teacher Workshops
- Girl Scouts of the USA (GSUSA) Partnership
- International Technology Education Association (ITEA)
- JPL Open House
- JSC Open House—Space Science
- JSC Outreach to Scientists
- JSC Outreach to Women and Minorities
- Microbes Teacher Workshop

International Missions with NASA Participation

Mars Express

Activities:
- From the Outer Planets to the Inner City
- International Technology Education Association (ITEA)
- JPL Open House
- Live From Mars 2001 and Live From Mars 2002
- Mars Classroom Visits
- Mars Curator/Docent Professional Development
- Mars Educational Product Development/Dissemination
- Mars Educator Workshops
- Mars Media and Visualizations
- Mars Model Loans
- Mars Open Houses
- Mars Robotics Education
- Mars Speaker Support
- Mars Student Support
- Mars Tours
- Mars Web Site
- MarsQuest Traveling Exhibit
- Solar System Ambassadors Program

MU Space Engineering Spacecraft-C Nanorover (MUSES-CN)

Activities:
- International Technology Education Association (ITEA)
- JPL Open House
- Solar System Ambassadors Program

Nozomi Neutral Mass Spectrometer [Planet-B] (NMS)

Activities:
- International Technology Education Association (ITEA)
- JPL Open House

Rosetta

Activities:
- International Technology Education Association (ITEA)
- JPL Open House

STRUCTURE AND EVOLUTION OF THE UNIVERSE MISSIONS

Major Missions

Advanced Radio Interferometry between Space and Earth (ARISE)

Activities: Cosmic Questions: Our Place in Space and Time

Chandra X-Ray Observatory (CXO)

NASA's Chandra X-ray Observatory, which was launched and deployed by Space Shuttle Columbia in July of 1999, is one of the most sophisticated x-ray observatories built to date. X-ray telescopes are the only way we can observe extremely hot, turbulent regions of space where matter has temperatures of millions of degrees Celsius. Chandra's unique power and precision provide astronomers with detailed information about the remnants of exploded stars, active young stars in star clusters, neutron star powerhouses, matter swirling toward black holes, supermassive black holes at the centers of galaxies, and vast clouds of hot gas in clusters of galaxies. By observing these objects with Chandra, scientists from around the world move closer to understanding the life cycles of stars, the generation of winds and jets of high energy particles, the flow pattern of matter near black holes, the nature of gravitationally warped space near black hole event horizons, the formation of supermassive black holes and galaxy clusters, and the nature of the mysterious dark matter that comprises most of the mass of the universe. Understanding these issues will help scientists resolve questions about the evolution and ultimate fate of our universe. The goals of the Chandra E/PO program are to share Chandra's new discoveries about the universe with broad segments of the public through a variety of accessible media and technologies including an award-winning public Web site; to engage the imaginations of students, teachers, and members of the public with talks and informal learning products; and to increase formal student and teacher learning opportunities utilizing space science content in lessons, classroom activities, and workshops.

Lead: Ms. Kathleen Lestition, Harvard-Smithsonian Center for Astrophysics, Chandra X-Ray Center, MS06, 60 Garden Street, Cambridge, MA 02138.
E-mail: *klestition@cfa.harvard.edu*. Phone: 617-495-7399.

URL: *http://chandra.harvard.edu/*

Activities:
Chandra CD-ROM
Chandra: Ask an Astrophysicist
Cosmic Questions: Our Place in Space and Time
Formal Education, Chandra X-Ray Center (CXC)
HETE-2 Teachers Workshops
High Energy Vision: The Chandra X-ray Observatory (Video)
Informal Education by the MIT Center for Space Research
Informal Education, Chandra X-Ray Center (CXC)
Live From a Black Hole/Live From the Edge of Space and Time
Live From a Black Hole—Video
Live From the Edge of the Universe—Video
MicroObservatory Online Telescopes
MIT Center for Space Research: Education and Public Outreach Web Page
National Boy Scout Jamboree
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
Project ASTRO—Improving Science Education Through Astronomer-Teacher Partnerships in Grades 3-9
Public Outreach by MIT Center for Space Research
Public Outreach, Chandra X-Ray Center (CXC)
Scaling the Spectrum from Chandra X-ray Observatory
Solar System Ambassadors Program
Space Place Web Site
Teachers Workshops by the MIT Center for Space Research
Tours of the Chandra Operations Control Center by MIT Center for Space Research

Compton Gamma-Ray Observatory (CGRO)

Activities: Cosmic Questions: Our Place in Space and Time
Exploring the Extreme Universe (2nd Edition)
Live From a Black Hole/Live From the Edge of Space and Time

Constellation-X

Activities: American Astronomical Society/American Association of Physics Teachers Conference
Cosmic Questions: Our Place in Space and Time
Exploring the Extreme Universe (2nd Edition)
Live From a Black Hole/Live From the Edge of Space and Time
National Science Teachers Association (NSTA)

Gamma-ray Large Area Space Telescope (GLAST)

Gamma-ray astronomy is an exciting field for the public as well as for the researcher. Both young and old can be engaged by the exotic concepts of black holes and violent explosions seen across the universe. The goal of our GLAST E/PO program is to utilize the observations and scientific discoveries of the GLAST mission to improve the understanding and utilization of physical science and mathematics concepts for grades 9-12. We have therefore developed an Education and Public Outreach Program that is well suited to promote inquiry into the origin and structure of the universe and the fundamental relationship between energy and matter, concepts which are included in the Physical Science Content Standards A, B, and D for grades 9-12. The GLAST E/PO program includes the following elements: an outreach Web site; a PBS television show on high-energy astronomy to be developed with Thomas Lucas Productions; up to 10 GLAST Ambassadors who will help us develop, test, and disseminate printed and Web-based educational materials; printed learning modules developed by TOPS Science; Web-based learning modules developed with Videodiscovery, Inc.; a network of amateur and professional ground-based telescopes to support GLAST observations of gamma-ray bursts and active galaxies; participation in the SEU traveling museum exhibit; and the development of a new exhibit for the SLAC Virtual Visitor's Center. We will disseminate our materials through the NASA support network, as well as in workshops at national and regional teacher conferences and through our partners, TOPS and Videodiscovery. Evaluation of the GLAST E/PO program is being done by WestEd.

Lead: Dr. Lynn Cominsky, Sonoma State University, Dept. of Physics and Astronomy, 1801 East Cotati Avenue, Rohnert Park, CA 94928.
E-mail: *lynnc@charmian.sonoma.edu*. Phone: 707-664-2655.
URL: *http://www-glast.sonoma.edu*
Activities: American Astronomical Society/American Association of Physics Teachers Conference
Cosmic Questions: Our Place in Space and Time
GLAST and Swift Space Scientists Web Chats Through NASA Quest
GLAST Presentations to K-12 students
GLAST Public Presentations
GLAST Sponsored Presentations to Teachers
Live From a Black Hole/Live From the Edge of Space and Time
National Science Teachers Association (NSTA)

Gravity Probe B Relativity Mission (GP-B)

Gravity Probe B's E/PO program creates materials and presentations intended to communicate the central scientific and technological aspects of the mission. To this end, we are creating lesson guides, flyers, a poster, a video, and a CD-ROM. These materials are distributed and demonstrated at national and regional conferences and are used in presentations at local schools. In addition, Gravity Probe B plans to collaborate with other E/PO offices to leverage the science that each brings to an educational outreach product.

Lead: Mr. Shannon Range, Stanford University, HEPL 4085, Stanford, CA 94305.
E-mail: *kdoah@stanford.edu*. Phone: 415-824-1716.
URL: *http://einstein.stanford.edu*
Activities: American Astronomical Society/American Association of Physics Teachers Conference
Cosmic Questions: Our Place in Space and Time
Live From a Black Hole/Live From the Edge of Space and Time
National Science Teachers Association (NSTA)
Presenting Einstein's Relativity and Gravity Probe B in High School Classrooms
Presenting Gravity Probe B at Science Education Conferences

Laser Interferometer Space Antenna (LISA)
Activities: American Astronomical Society/American Association of Physics Teachers Conference
Cosmic Questions: Our Place in Space and Time
National Science Teachers Association (NSTA)
Space Place Web Site

Explorers

Cooperative Astrophysics and Technology Satellite (CATSAT)
Activities: American Astronomical Society/American Association of Physics Teachers Conference

Cosmic Background Explorer (COBE)
Activities: COBE Image Gallery

Cosmic Hot Interstellar Plasma Spectrometer (CHIPS)
The E/PO effort for CHIPS will be led by the Science Education Gateway (SEGway) project of the Center for Science Education at the Space Sciences Laboratory, UC Berkeley. SEGway is an established national consortium of science museums that brings together the expertise of scientists, museum personnel, and educators. We will develop Web-based modules for grades 9-12, conduct professional development workshops for teachers, and disseminate our resources through our highly popular museum Web sites and structures within NASA's Education and OSS communities. CHIPS scientists and technical personnel will participate in the Space Scientists Series of the NASA Quest/Chat program. The UC Berkeley Graduate School of Education will test classroom materials and evaluate our program. CHIPS E/PO will create technology-based public events and self-guided tutorials highlighting the structure, history, and future of Earth's neighborhood in and around the Local Bubble, making the CHIPS mission and its research results accessible to the general public as well. Implications of the temperature map that the CHIPS mission will produce can be conveyed to general audiences through powerful analogies. The temperature map of the gas in the Local Bubble can be likened to the archeological remains of the last supernova that affected the neighborhood of the Sun. The Local Bubble also acts as a "galactic El Niño"—a region of hot, million-degree gas that affects the evolution of our local interstellar neighborhood, similar to the warm ocean waters that affect global weather patterns on Earth.
Lead: Dr. Nahide Craig, University of California, Berkeley, Space Sciences Laboratory MC 7450, Berkeley, CA 94720. E-mail: *ncraig@ssl.berkeley.edu*. Phone: 510-643-7273.
Activities: Academic Talent Development Program Grades 6-9
American Astronomical Society/American Association of Physics Teachers Conference
Cosmic Questions: Our Place in Space and Time
Using Space Science Research to Support Physics Learning

Extreme Ultraviolet Explorer (EUVE)
Activities: American Astronomical Society/American Association of Physics Teachers Conference
National Science Teachers Association (NSTA)
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Galaxy Evolution Explorer (GALEX)
Activities: American Astronomical Society/American Association of Physics Teachers Conference
Cosmic Questions: Our Place in Space and Time
National Science Teachers Association (NSTA)
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

High Energy Transient Explorer 2 (HETE-2)
The primary goal of HETE-2 is to determine the origin and nature of cosmic gamma-ray bursts (GRBs). This is accomplished through the simultaneous, broad-band observation in the soft x-ray, medium x-ray, and gamma-ray energy ranges, and the precise localization and identification of cosmic gamma-ray burst sources (GRBs). With its involvement in the E/PO activities of the MIT Center for Space Research, HETE-2 contributes to the enhancement of scientific and technological literacy by engaging people's imagination, strengthening their interest in science and exploration, and promoting their understanding and appreciation of science.

Lead: Dr. Irene Porro, Massachusetts Institute of Technology, NE80-6079, 77 Massachusetts Avenue, Cambridge, MA 02139.
E-mail: *iporro@space.mit.edu*. Phone: 617-258-7481.
URL: *http://space.mit.edu/HETE/*
Activities: American Astronomical Society/American Association of Physics Teachers Conference
Cosmic Questions: Our Place in Space and Time
HETE-2 Informal Education
HETE-2 Teachers Workshops
National Science Teachers Association (NSTA)
Tours of the HETE-2 Command and Control Center

Microwave Anisotropy Probe (MAP)

MAP has concentrated its Education/Outreach efforts in electronic forms. MAP's mission page has recently undergone a redesign and now also links to the "Teacher Guide to the Universe" Web site. MAP has been represented at national conferences by education staff, and it has contributed to SEU Forum Folders. MAP has also contributed to the Cosmic Journey lesson plans, which were featured on the "Passport to Knowledge" television series. MAP was also a featured satellite on the "Imagine the Universe" Web site. MAP continues to work with the Cooperative Satellite Learning Program and Old Bridge High School.

Lead: Dr. David Spergel, Princeton University, Princeton, NJ 08544-1001.
E-mail: *dns@astro.princeton.edu*. Phone: 609-258-3589.
URL: *http://map.gsfc.nasa.gov*
Activities: American Astronomical Society/American Association of Physics Teachers Conference
Cosmic Questions: Our Place in Space and Time
Live From a Black Hole/Live From the Edge of Space and Time
Microwave Anisotropy Probe (MAP) Formal Education
Microwave Anisotropy Probe (MAP) Public Outreach
National Science Teachers Association (NSTA)

Rossi X-ray Timing Explorer (RXTE)

Lead: Dr. James Lochner, NASA Goddard Space Flight Center, 662, Greenbelt, MD 20771.
E-mail: *lochner@xeric.gsfc.nasa.gov*. Phone: 301-286-9711.
URL: *http://heasarc.gsfc.nasa.gov/docs/xte/*
Activities: American Astronomical Society/American Association of Physics Teachers Conference
Cosmic Questions: Our Place in Space and Time
HETE-2 Teachers Workshops
Live From a Black Hole/Live From the Edge of Space and Time
Tour the X-Ray Sky

Submillimeter Wave Astronomy Satellite (SWAS)

Activities: American Astronomical Society/American Association of Physics Teachers Conference
Cosmic Questions: Our Place in Space and Time
National Science Teachers Association (NSTA)

Swift Gamma-Ray Burst MIDEX Mission (Swift)

The Swift E/PO program is intended to use the amazing science behind the mission to understand gamma-ray bursts to engage grades 7-12 students in learning standards-based math and science. The multifaceted Swift E/PO program includes development of cutting-edge curriculum materials for the grades 7-12 classroom (teachers may download them for free from the Web, have their students interact with Swift scientists on the Web, request printed copies, and attend educator workshops presented by Swift scientists); the Lawrence Hall of Science GEMS Guide on the "Invisible Universe," available in spring 2003; and What's in the News? broadcasts focusing on Swift and Swift science (seven segments during years 2001-06 are broadcast via public television, and coordinated classroom materials are available on the Web).

Lead: Dr. Laura Whitlock, Sonoma State University, Dept. Physics & Astronomy, 1801 East Cotati Avenue, Rohnert Park, CA 94928.
E-mail: *laura.whitlock@sonoma.edu*. Phone: 707-664-2256.
URL: *http://swift.sonoma.edu*
Activities: American Astronomical Society/American Association of Physics Teachers Conference
Cosmic Questions: Our Place in Space and Time

Exceptional Space Science Materials for Exceptional Students
GLAST and Swift Space Scientists Web Chats Through NASA Quest
Live From a Black Hole/Live From the Edge of Space and Time
National Science Teachers Association (NSTA)
Spin-A-Spectrum! Wheel and Teacher's Guide
Swift Classroom Materials Development
Swift Public Outreach Activities
Swift Student Workshops
Swift Teacher Workshops
Waves Light Up the Universe! Slinky and Teacher's Guide
Who's Got the Power? Card Deck and Teacher's Guide

Attached Payloads

Advanced Cosmic-ray Composition Experiment for the Space Station (ACCESS)
Lead: Ms. Beth Jacob, NASA Goddard Space Flight Center, 661, Greenbelt, MD 20771.
E-mail: *beth@gamma.gsfc.nasa.gov*. Phone: 301-286-7209.
URL: *http://lheawww.gsfc.nasa.gov/ACCESS/*
Activities: Cosmic Questions: Our Place in Space and Time

Other NASA Programs

High Energy Astrophysics Science Archive Research Center (HEASARC)
Since 1996, the HEASARC E/PO program has been bringing information and curriculum support materials to upper middle school, high school, and lower undergraduate students and their teachers on topics in the structure and evolution of the universe, with emphasis on high-energy astronomy. The E/PO program consists of the "Imagine the Universe!" Web site, a series of posters and information/activity booklets, and a repertoire of educator workshops. Both scientists and educators are involved in the development and testing of the materials, which use satellite data to teach topics in science and math. The HEASARC also hosts the StarChild Web site and annually publishes a CD-ROM containing "Imagine," "StarChild," and the "Astronomy Picture of the Day." Materials are distributed to thousands of educators via workshops, meetings, and e-mail requests. The HEASARC also coordinates with the E/PO programs of other SEU high-energy astrophysics missions such as RXTE, GLAST, Swift, and XMM.
Lead: Dr. James Lochner, NASA Goddard Space Flight Center, 662, Greenbelt, MD 20771.
E-mail: *lochner@xeric.gsfc.nasa.gov*. Phone: 301-286-9711.
URL: *http://heasarc.gsfc.nasa.gov/docs/corp/outreach.html*
Activities: American Astronomical Society/American Association of Physics Teachers Conference
Cosmic Questions: Our Place in Space and Time
Got Calcium?
HEASARC Educator Workshop
HEASARC Presentation
Imagine the Universe! CD-ROM (5th Edition)
Live From a Black Hole/Live From the Edge of Space and Time
National Science Teachers Association (NSTA)
The Cosmic Distance Scale

International Missions with NASA Participation

Astro-E
Activities: Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Far-Infrared and Submillimeter Telescope (FIRST)
Activities: American Astronomical Society/American Association of Physics Teachers Conference
Cosmic Questions: Our Place in Space and Time
National Science Teachers Association (NSTA)

International Gamma-Ray Astrophysics Laboratory (INTEGRAL)
Activities: American Astronomical Society/American Association of Physics Teachers Conference
Cosmic Questions: Our Place in Space and Time

Planck Surveyor (Planck)
Activities: American Astronomical Society/American Association of Physics Teachers Conference
National Science Teachers Association (NSTA)

Satellite Per Astronomia X (BeppoSAX)
Activities: American Astronomical Society/American Association of Physics Teachers Conference

Spectrum X Gamma (SXG)
Activities: American Astronomical Society/American Association of Physics Teachers Conference

VLBI Space Observatory Programme (VSOP)
Activities: American Astronomical Society/American Association of Physics Teachers Conference

X-ray Multi-mirror Mission (XMM-Newton)
The XMM-Newton Education and Public Outreach program is designed to inform the public and the education community about XMM-Newton discoveries. Program elements include 1) the development of educational materials aimed at secondary science classrooms; 2) educator workshops at regional and national science teacher meetings; 3) a Web site, aimed at the nonscientist and educator, containing information about x-ray astronomy, the mission, and XMM-Newton discoveries; 4) extended summer teacher workshops; and 5) classroom visits from XMM-Newton team members.
Lead: Mr. Christian Foster, University of California, Santa Barbara, College of Letters and Science, Santa Barbara, CA 93106.
E-mail: *cfoster@ltsc.ucsb.edu*. Phone: 805-893-7966.
URL: *http://outreach.ucsb.edu/xmm/xmm xmm*
Activities: American Astronomical Society/American Association of Physics Teachers Conference
Cosmic Questions: Our Place in Space and Time
Live From a Black Hole/Live From the Edge of Space and Time
National Science Teachers Association (NSTA)
XMM E/PO Summer Planning Workshop
XMM-Newton E/PO Mission Flyer
XMM-Newton Exhibit Booth
XMM-Newton Summer Teachers Workshop

SUN-EARTH CONNECTION MISSIONS

Major Missions

Interstellar Probe (IS)
The Interstellar Probe mission will support science talks for educators.
Lead: Dr. Paulett Liewer, NASA Jet Propulsion Laboratory, Mail Stop 169-506, Pasadena, CA 91109.
E-mail: *paulett.liewer@jpl.nasa.gov*. Phone: 818-354-6538.
URL: *http://interstellar.jpl.nasa.gov*

Solar Probe (SP)
Formerly part of the Outer Planets/Solar Probe Project, the Solar Probe now operates as a separate Solar Probe Project, currently under study. The E/PO activities described here were developed under the Outer Planets/Solar Probe Project.
Lead: Mr. Richard Shope III, NASA Jet Propulsion Laboratory, M/S 301-335, Pasadena, CA 91109.
E-mail: *rick.shope@jpl.nasa.gov*. Phone: 818-354-3812.
URL: *http://www.jpl.nasa.gov/ice_fire/sprobe.htm*
Activities: From the Outer Planets to the Inner City
From the Sun to the Star Nations

Solar System Ambassadors Program
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

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Ulysses

Lead: Ms. Andrea Angrum, NASA Jet Propulsion Laboratory, 264-801, Pasadena, CA 91109.
E-mail: *andrea.angrum@jpl.nasa.gov*. Phone: 818-354-6775.
URL: *http://www.ulysses.jpl.nasa.gov*
Activities: From the Outer Planets to the Inner City
From the Sun to the Star Nations
International Technology Education Association (ITEA)
National Science Teachers Association (NSTA)
Passport to the Solar System
SECEF Support for Student Programs
Solar System Ambassadors Program
Sun-Earth Day
Ulysses Facility Tours
Ulysses Interview Program
Voyager Interview Program
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

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Voyager

Activities: Earth and Space Images for the Classroom
From the Outer Planets to the Inner City
From the Sun to the Star Nations
International Technology Education Association (ITEA)
JPL Open House
National Boy Scout Jamboree
Passport to the Solar System
Solar System Ambassadors Program
Space Place Newspaper Contributions
Space Place Web Site
Ulysses Interview Program
Voyager Interview Program
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Explorers

Advanced Composition Explorer (ACE)

Advanced Composition Explorer (ACE) shares the following topics through workshops and presentations: composition of solar system and extra-solar bodies; particle composition, from solar wind to galactic cosmic rays; transient events—causes and effects; solar and galactic evolution; and stellar nucleosynthesis.

Lead: Dr. Eric Christian, NASA Goddard Space Flight Center, Code 661, Greenbelt, MD 20771.
E-mail: *erc@cosmicra.gsfc.nasa.gov*. Phone: 301-286-1041.
URL: *http://www.srl.caltech.edu.ACE*
Activities: A Space Weather Module for Los Alamos Space Science Outreach (LASSO)
Cooperative Satellite Learning Project—ACE
Girl Scout Support
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
Passport to the Solar System
SECEF Support for Student Programs
Space Weather Center Traveling Exhibit
Sun-Earth Day
Support for the Young Engineers and Scientists Program
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Fast Auroral Snapshot Explorer (FAST)

Lead: Dr. Nahide Craig, University of California, Berkeley, MC 7450, Berkeley, CA 94720.
E-mail: *ncraig@ssl.berkeley.edu*. Phone: 510-643-7273.
URL: *http://sunland.gsfc.nasa.gov/smex/fast*
Activities: Auroras: Paintings in the Sky
Fast Auroral Snapshot Explorer (FAST)—Dawn of the North
HESSI @CALday/Exhibit and Demonstrations
National Science Teachers Association (NSTA)
SECEF Support for Student Programs
Sun-Earth Day

High Energy Solar Spectroscopic Imager (HESSI)

HESSI E/PO's primary goal is to provide high-quality education and outreach experiences for precollege teachers, their students, and the general public. Additionally, by nature of our university/NASA Center collaboration, HESSI will be able to provide research opportunities to enhance the education of undergraduate and graduate students. Thus, the HESSI Education and Public Outreach effort will permeate all facets of the mission, allowing the college-level students to serve as effective liaisons to the precollege community we plan to involve. UCB's educational and public outreach efforts will focus on middle and high school teachers, their students, and the public. In the formal arena, we will concentrate on the middle school grades six through eight, since here is where HESSI-related content is taught in the precollege science curriculum, and where students typically stop being interested in science. We will also conduct regular public awareness activities highlighting HESSI data in collaboration with the Exploratorium. The Exploratorium's "Live @ the Exploratorium" Internet Webcast series will be able to highlight HESSI during the years of high solar activity through regularly scheduled public events of national scope. We plan to continue this high-leverage collaboration. To complement these high-visibility Internet Webcasts for the public, we will develop self-guided Web modules that highlight key aspects of the HESSI mission and its data. These modules will be distributed nationally through the Exploratorium and our other science museum partners (National Air and Space Museum, Science Museum of Virginia, and Lawrence Hall of Science), who will highlight the modules on an ongoing basis in their highly popular Web sites.

Lead: Dr. Nahide Craig, University of California, Berkeley, MC 7450, Berkeley, CA 94720.
E-mail: *ncraig@ssl.berkeley.edu*. Phone: 510-643-7273.
URL: *http://cse.ssl.berkeley.edu/hessi*
Activities: Girl Scout Support
HESSI @CALday/Exhibit and Demonstrations
HESSI Informal Education Planetarium/Science Center/Museum Outreach
HESSI—Sun Discoveries
International Technology Education Association (ITEA)
National Science Teachers Association (NSTA)
SECEF Educator Internships
SECEF Support for Student Programs
Solar Convection, Spectroscopy, and Velocity and Acceleration
Space Weather Center Traveling Exhibit
Students United With NASA Becoming Enthusiastic About Math and Science (SUNBEAMS)
Sun-Earth Connection Educational Workshop
Sun-Earth Day
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Imager for Magnetopause-to-Aurora Global Exploration (IMAGE)

The IMAGE E/PO program is called Public Outreach, Education, Teaching and Reaching Youth (POETRY). We specialize in developing classroom activities, CD-ROMs, and other products that help students understand Earth's magnetic field, its radiation belts, and the impacts of solar activity on our technology. We also conduct an award-winning "Ask the Space Scientist" Web-based resource where students may ask questions about space science.

Lead: Dr. Sten Odenwald, NASA Goddard Space Flight Center, Code 630, Greenbelt, MD 20771.
E-mail: *odenwald@bolero.gsfc.nasa.gov*. Phone: 301-286-6953.
URL: *http://image.gsfc.nasa.gov/poetry*
Activities: A Space Weather Module for Los Alamos Space Science Outreach (LASSO)
Exploring Earth's Magnetic Field
Exploring the Sun-Earth Connection

Girl Scout Support
IMAGE Books and Articles
IMAGE E/PO on the Internet
IMAGE K-12 Education Products
IMAGE Public Lectures
IMAGE Teacher Workshops
IMAGE Television and Radio Programs
International Technology Education Association (ITEA)
Living with a Star: An Educator Guide with Activities in Sun-Earth Connection Science
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
Passport to the Solar System
SECEF Astronomy Club
SECEF Educator Internships
SECEF Star Parties
SECEF Support for Student Programs
Space Weather Center Traveling Exhibit
Sun-Earth Connection Educational Workshop
Sun-Earth Day
Support for the Young Engineers and Scientists Program
Tracking a Solar Storm
TWINS—Teacher Training Program

Interplanetary Monitoring Platform (IMP-8)

IMP-8 scientists at NASA Goddard Space Flight Center provide their expertise through the validation of educational products whose content deals with interplanetary and magnetotail studies of cosmic rays, energetic solar particles, plasma, and electric and magnetic fields.

Lead: Dr. Ron Lepping, NASA Goddard Space Flight Center, Mail 660, Greenbelt, MD 20771.
E-mail: *rpl@leprpli.gsfc.nasa.gov.*
URL: *http://nssdc.gsfc.nasa.gov/nmc/tmp/1973-078A.html*
Activities: IMP-8 Content Support
Informal Education by the MIT Center for Space Research
Teachers Workshops by the MIT Center for Space Research

Solar Anomalous and Magnetospheric Particle Explorer (SAMPEX)

The Solar Anomalous and Magnetospheric Particle Explorer (SAMPEX) scientists and engineers at NASA Goddard Space Flight Center support a high school team in the Cooperative Satellite Learning Program that involves students in the process of developing and operating SAMPEX. A Mission Monitor system in the high school receives and processes SAMPEX satellite data and provides computer-assisted tutoring.

Lead: Mr. James Watzin, NASA Goddard Space Flight Center, Mail Stop 474, Greenbelt, MD 20771.
E-mail: *jwatzin@pop700.gsfc.nasa.gov*. Phone: 301-286-7933.
URL: *http://sunland.gsfc.nasa.gov/smex/sampex/index.html*
Activities: Cooperative Satellite Learning Project—SAMPEX

Student Nitric Oxide Explorer (SNOE)

The Student Nitric Oxide Explorer (SNOE) is a small scientific satellite that is measuring the effects of energy from the Sun and the magnetosphere on the density of nitric oxide in Earth's upper atmosphere. it is one of the three projects selected for the Student Explorer Demonstration Initiative Program (STEDI) to demonstrate that university-led teams can successfully carry out high-quality space science and technology missions.

Lead: Dr. Charles Barth, University of Colorado, Laboratory for Atmospheric and Space Physics, Boulder, CO 80309.
E-mail: *Charles.Barth@Colorado.EDU*. Phone: 303-492-7504.
URL: *http://lasp.colorado.edu/snoe*

Transition Region and Coronal Explorer (TRACE)

Transition Region and Coronal Explorer (TRACE) at Goddard Space Flight Center provides high-resolution data to a variety of publications, such as Astronomy, Scientific American, Time, and Life, and to TV programs in order to familiarize the general public with the science output provided by TRACE.

Lead: Ms. Dawn Myers, NASA Goddard Space Flight Center, Code 682.3, Greenbelt, MD 20771.
E-mail: *dcm@chippewa.nascom.nasa.gov*. Phone: 301-286-5283.
URL: *http://vestige.lmsal.com/TRACE/*
Activities: National Science Teachers Association (NSTA)
Passport to the Solar System
SECEF Support for Student Programs
Sun-Earth Day
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

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Two Wide-angle Imaging Neutral-Atom Spectrometers (TWINS)

The TWINS Education and Outreach program is carried out through the Los Alamos Space Science Outreach (LASSO) program, an umbrella program for space science education activities at Los Alamos National Laboratory (LANL), which is based on teacher workshops in which K-14 teachers spend several weeks at LANL learning space science from lab scientists and developing methods and materials for teaching this science to their students. The program supports an instructional model based on education research and cognitive theory. Students and teachers engage in activities that encourage critical thinking and a constructivist approach to learning.

Lead: Dr. Ruth Skoug, Los Alamos National Laboratory, MS D466m NIS-1, Los Alamos, NM 87545.
E-mail: *rskoug@lanl.gov*. Phone: 505-667-6594.
URL: *http://nis.www.lanl.gov/nis-project/twins/*
Activities: A Space Weather Module for Los Alamos Space Science Outreach (LASSO)
TWINS—Teacher Training Program

International Solar-Terrestrial Physics (ISTP)

ISTP Program Office (ISTP)

The ISTP Program is a comprehensive effort to observe and understand our star and its effect on our environment. The Education and Public Outreach effort focuses on sharing those discoveries in the formal and informal education communities through mentoring, exhibits, and workshops.

Lead: Mr. Michael Carlowicz, NASA Goddard Space Flight Center, Code 690, Greenbelt, MD 20771.
E-mail: *mcarlowi@pop600.gsfc.nasa.gov*. Phone: 301-286-6353.
URL: *http://istp.gsfc.nasa.gov*
Activities: From the Sun to the Earth Content Workshop
International Technology Education Association (ITEA)
ISTP Teacher Scientist Collaboration Experience
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
Passport to the Solar System
SECEF Educator Internships
SECEF Support for Student Programs
Seeing the Invisible—Teachers Guide
Space Weather Center Traveling Exhibit
Sun-Earth Connection Educational Workshop
Support for the Young Engineers and Scientists Program
Teacher Thursday
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

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Cluster II

The mission E/PO program is developed and coordinated through the ISTP Program Office.

Lead: Mr. Michael Carlowicz, NASA Goddard Space Flight Center, Code 690, Greenbelt, MD 20771.
E-mail: *mcarlowi@pop600.gsfc.nasa.gov*. Phone: 301-286-6353.
URL: *http://sci.esa.int/home/clusterii/index.cfm*
Activities: From the Sun to the Earth Content Workshop
SECEF Support for Student Programs
Sun-Earth Day

Geotail

The ISTP Program office coordinates all of the E/PO Program activities. The mission's science discoveries are presented through the programs as a way of showing how the data gathered from multiple missions provides a total picture of the research desired.

Lead: Mr. Michael Carlowicz, NASA Goddard Space Flight Center, code 690, Greenbelt, MD 20771.
E-mail: *mcarlowi@pop600.gsfc.nasa.gov*. Phone: 301-286-6353.
URL: *http://www-istp.gsfc.nasa.gov/istp/geotail*
Activities:
From the Sun to the Earth Content Workshop
SECEF Support for Student Programs

Polar

The ISTP Program office coordinates all of the E/PO Program activities. The mission's science discoveries are presented through the programs as a way of showing how the data gathered from multiple missions provides a total picture of the research desired.

Lead: Mr. Michael Carlowicz, NASA Goddard Space Flight Center, Code 690, Greenbelt, MD 20771.
E-mail: *mcarlowi@pop600.gsf.nasa.gov*. Phone: 301-286-6353.
URL: *http://www-istp.gsfc.nasa.gov/istp/polar*
Activities:
From the Sun to the Earth Content Workshop
Passport to the Solar System
SECEF Star Parties
SECEF Support for Student Programs
Support for the Young Engineers and Scientists Program
Teacher Thursday
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Solar and Heliospheric Observatory (SOHO)

The program generates and distributes educational and outreach materials on the Sun and SOHO for use in schools and by the public. Materials include posters, CDs, image sets, slide sets, stickers, and videos. Scientists give presentations to classrooms, teacher workshops, museums, and other scientists. Materials are also provided to publications and news organizations.

Lead: Dr. Steele Hill, NASA Goddard Space Flight Center, Code 682.3, Greenbelt, MD 20771.
E-mail: *steele.hill@gsfc.nasa.gov*. Phone: 301-286-6452.
URL: *http://soho.nascom.nasa.gov*
Activities:
Colors of the Sun
Colors of the Sun Spectroscope
Girl Scout Support
International Technology Education Association (ITEA)
National Science Teachers Association (NSTA)
Partnerships in Astronomy and Astrophysics Education and Research at Southern University
Passport to the Solar System
SECEF Educator Internships
SECEF Star Parties
SECEF Support for Student Programs
SOHO Outreach Activities by the UVCS Group
SOHO—Presentations and Assistance at Museums
SOHO—Visits to Schools
Solar Convection, Spectroscopy, and Velocity and Acceleration
Solar Flip Book
Solar System Ambassadors Program
Space Weather Center Traveling Exhibit
Sun-Earth Connection Educational Workshop
Sun-Earth Day
Support for the Young Engineers and Scientists Program
Under the Umbrella Professional Development Conference for Chicago Science Teachers
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Wind

The ISTP Program office coordinates all of the E/PO Program activities. The mission's science discoveries are presented through the programs as a way of showing how the data gathered from multiple missions provides a total picture of the research desired.

Lead: Mr. Michael Carlowicz, NASA Goddard Space Flight Center, Code 690, Greenbelt, MD 20771.
E-mail: *mcarlowi@pop690.gsfc.nasa.gov*. Phone: 301-286-5363.
URL: *http://www.istp.gsfc.nasa.gov/istp/wind*
Activities:
- Exploring the Extreme Universe (2nd Edition)
- From the Sun to the Earth Content Workshop
- Informal Education by the MIT Center for Space Research
- Passport to the Solar System
- SECEF Support for Student Programs
- Support for the Young Engineers and Scientists Program
- Teachers Workshops by the MIT Center for Space Research
- Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Solar-Terrestrial Probe (STP)

STP Program Office (STP)

NASA's STP Program represents a significant opportunity for groundbreaking educational outreach in the fields of solar science, information technology, engineering studies, and the solar system. The STP Program Office initiates programs that adhere to E/PO guidelines set forth by the Office of Space Science. This includes E/PO efforts for formal and informal education, public outreach, and public and media relations. The program promotes excellence in science, mathematics, engineering, and technology education through direct involvement in partnerships, workshops, and internships. Most programs lend themselves to nationwide participation, with special emphasis on serving groups historically underrepresented in space sciences.

Lead: Ms. Barbara Lambert, NASA Goddard Space Flight Center, Code 460, Greenbelt, MD 20771.
E-mail: *blambert@hst.nasa.gov*. Phone: 301-286-1275.
URL: *http://stp.gsfc.nasa.gov*
Activities:
- Girl Scout Support
- International Technology Education Association (ITEA)
- Live from Africa—Solar Eclipse
- LWS 2001 Student Internship
- LWS Project 2061 Workshop for K-12 Teachers and E/PO Leads
- National Council of Teachers of Mathematics (NCTM)
- Our Very Own Star
- SECEF Educator Internships
- SECEF Star Parties
- SECEF Support for Student Programs
- Solar Terrestrial Probe (STP) Internships for Students
- Space Science Education and Sun-Earth Connection
- STEREO Mission Lectures and Hands-On Application
- STP Internships for Teachers
- STP K-12 Program Development
- STP Public Speaking Engagements and Classroom Visits
- STP Science, Math, Engineering, and Technology—Workshops
- STP Student Challenges and Competitions
- Sun-Earth Connection Educational Workshop
- Sun-Earth Day
- Support for the Young Engineers and Scientists Program

Geospace Electrodynamic Connections (GEC)
See STP Program Office.
Lead: Ms. Barbara Lambert, NASA Goddard Space Flight Center, Code 460, Greenbelt, MD 20771.
E-mail: *blambert@hst.nasa.gov*. Phone: 301-286-1275.
URL: *http://stp.gsfc.nasa.gov*
Activities: SECEF Support for Student Programs

Magnetospheric Constellation (MC)
See STP Program Office.
Lead: Ms. Barbara Lambert, NASA Goddard Space Flight Center, Code 460, Greenbelt, MD 20771.
E-mail: *blambert@hst.nasa.gov*. Phone: 301-286-1275.
URL: *http://stp.gsfc.nasa.gov*

Magnetospheric Multiscale (MMS)
See STP Program Office.
Lead: Ms. Barbara Lambert, NASA Goddard Space Flight Center, Code 460, Greenbelt, MD 20771.
E-mail: *blambert@hst.nasa.gov*. Phone: 301-286-1275.
URL: *http://stp.gsfc.nasa.gov*

Solar-B
Solar-B E/PO will primarily be developed and implemented at the new Chabot Space & Science Center in collaboration with the Lockheed-Martin Solar and Astrophysics Lab. Forms of education and outreach include exhibits, teacher training workshops, video/multimedia productions, posters and brochures, an adult solar astronomy class, "solar" summer camps for children, and a high school solar astronomy internship program.
Lead: Mr. Benjamin Burress, Chabot Space and Science Center,
Attn: Ben Burress, 10902 Skyline Blvd., Oakland, CA 94619.
E-mail: *bburress@chabotspace.org*. Phone: 510-336-7308.
URL: *http://www.chabotspace.org/vsc/exhibits/solarb/default.asp*
Activities: Solar Summer Camp Activities
Solar-B Exhibit, Phase I
Solar-B Focal Plane Web Site
Touch the Sun Activities Guide
Touch the Sun Teacher Training Workshop

Solar-Terrestrial Relations Observatory (STEREO)
See STP Program for STEREO's overall E/PO efforts. Additional specific E/PO efforts for the in situ Measurements of Particles and Coronal Mass Ejection Transients (IMPACT) instrument will be led by the Science Education Gateway (SEGway) project of the Center for Science Education at the Space Sciences Laboratory of the University of California at Berkeley (UCB). SEGway is an established national consortium of science museums that brings together the expertise of scientists, museum personnel, and educators. SEGway will develop Web modules for grades 9 through 12, conduct professional development workshops for teachers, and disseminate resources through highly popular museum Web sites. It will also develop self-guided Web resources to serve as supporting materials for Internet chat sessions. IMPACT scientists and technical personnel participate in the Space Scientists Series of the NASA Quest/Chat program. SEGway will coordinate activities with existing E/PO efforts at partnering institutions, including NASA Goddard Space Flight Center and Los Alamos National Laboratory. The UCB Graduate School of Education will evaluate the program. The IMPACT in situ experiment for the STEREO mission will measure the plasma density, velocity, temperature, and vector magnetic field of the solar wind, as well as solar energetic particles. By combining the solar imaging from other STEREO instruments with IMPACT observations, we will construct 3-D models of the solar corona and solar wind features that have the potential to captivate a wide range of audiences in the formal and informal science education communities. In particular, such models allow exciting visualizations of the propagation of coronal mass ejection transients from the Sun to Earth, which affect our "space weather." Space weather research has great public appeal because it deals with dynamic natural phenomena and has practical applications to communications and satellite enterprises.
Lead: Ms. Barbara Lambert, NASA Goddard Space Flight Center, NASA/GSFC Code 460, Greenbelt, MD 20771.
E-mail: *blambert@hst.nasa.gov*. Phone: 301-286-1275.
URL: *http://cse.ssl.berkeley.edu/impact*

Activities: HESSI Informal Education Planetarium/Science Center/Museum Outreach
Live from Africa—Solar Eclipse
SECEF Support for Student Programs
STEREO Mission Lectures and Hands-On Application
STEREO—Internships for Teachers
STEREO—Public Speaking Engagements and Classroom Visits
STEREO—Teacher Development Workshops
Sun-Earth Day
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

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Thermosphere Ionosphere Mesosphere Energetics and Dynamics (TIMED)

Lead: Ms. Kerri Beisser, Johns Hopkins Applied Physics Laboratory, 11100 Johns Hopkins Road, Laurel, MD 20723-6099.
E-mail: *kerri.beisser@jhuapl.edu*. Phone: 443-778-6050.

Activities: National Science Teachers Association (NSTA)
SECEF Support for Student Programs
Sun-Earth Connection Educational Workshop
Sun-Earth Day
TIMED Educational Student Events
TIMED Student Mentoring
TIMED Student Talks
TIMED Teacher Interns
TIMED Teacher Support

Other NASA Programs

Living With a Star (LWS)

The Living With a Star (LWS) E/PO program is committed to embarking with the education community on an aggressive effort to prepare students from kindergarten through college to meet the challenges of a changing technological global community. The LWS program and its partners will create innovative and challenging instructional techniques, enhance and target professional development workshops, and help community services, schools, colleges, and universities to increase students' achievement and performance. The LWS, in partnership with SEC, SECEF, and Project 2061, will promote literacy in science, math and technology in order to help the community comprehend their environment and the cause-and-effect relationships between the events at the Sun and their effects in geospace that influence life on Earth.

Lead: Ms. Evelina Felicite-Maurice, NASA Goddard Space Flight Center, Greenbelt, MD 20771.
E-mail: *efelicit@pop400.gsfc.nasa.gov*. Phone: 301 286-6949.

Activities: LWS 2001 Student Internship
LWS 2001 Summer Teacher Internship
LWS Project 2061 Workshop for K-12 Teachers and E/PO Leads

Space Technology-5 [New Millennium] (ST-5)

Activities: Club Space Place Activities
International Technology Education Association (ITEA)
Space Place Contributions to ITEA's "The Technology Teacher" Magazine
Space Place Newspaper Contributions
Space Place Web Site

International Missions with NASA Participation

Yohkoh

The Yohkoh Public Outreach Project (YPOP) is a Web-based project that includes a range of activites for youngsters, parents, teachers, and anyone interested in learning more about the Sun. You can make your own movies, see the latest solar images, and take a virtual tour of the Sun. The site also includes a basic introduction to the Yohkoh mission and scientific instruments and a Yohkoh scientific nuggets section where weekly scientific and observational highlights are disseminated.

Lead: Dr. David Alexander, Lockheed Martin Solar and Astrophysics Lab, Org. L9-41,B252, 3251 Hanover Street, Palo Alto, CA 94304.
E-mail: *alexander@lmsal.com*. Phone: 650-424-2047.

URL: *http://www.lmsal.com/SXT/*

Activities:
International Technology Education Association (ITEA)
National Council of Teachers of Mathematics (NCTM)
National Science Teachers Association (NSTA)
Passport to the Solar System
SECEF Support for Student Programs
Sun-Earth Connection Educational Workshop
Sun-Earth Day
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach
Yohkoh Public Outreach Project
Yohkoh Science Presentations
Yohkoh-Solar Week